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June 11, 2004

Refer to: 930-04-007 ESB:NL/lc

TO: Distribution

FROM: Eugene S. Burke

SUBJECT: Minutes for the Joint Users Resource Allocation Planning Committee Meeting held May 20, 2004

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NEXT JURAP MEETING:
Thursday, June 17, 2004
JPL Bldg. 303, Room 411 1:00 p.m.

Attendees:

Abramo, C.	Doody, D.	Morris, D.	Slade, M.
Andujo, A.	Guduru, S.	Retana, J.	Waldherr, S.
Brymer, B.	Hampton, E.	Ryne, M.	
Burke, E.	Martinez, G.	Satterlee, N.	

The Joint Users Resource Allocation Planning Committee meets monthly to review the status of Flight Projects, the requirements of other resource users, and to identify future requirements and outstanding conflicts. The last regular meeting was held on May 20, 2004 at the Jet Propulsion Laboratory.

Introductory Remarks – G. Burke

Mr. Burke, the JURAP Chairman, welcomed the attendees to the meeting. RAPSO is presently adding the 26M extended pre-calibrations prior to the Genesis “need date”.

Hayabusa/MUSES-C – M. Ryne

Mr. Ryne reported that newspaper reports indicating the Nozomi/Planet-B spacecraft would hit Mars are FALSE (the probability of impact is much less than 1%). The project has been terminated by Japan. The spacecraft is currently in heliocentric orbit and no further contact attempts are planned.

The Hayabusa Spacecraft began ballistic flight on April 1, 2004. DSN tracking resumes in support of Earth Swing-by. Trajectory Correction Maneuvers target Earth Swing-by with TCM-1 (April 20, 2004) and TRIM-3 (May 12, 2004). Earth Swing-by on May 19, 2004 at an altitude of 3728 km. Execution of post swing-by trajectory correction maneuver is considered unlikely. Ion engine operation expected to resume in less than one week.

The Hayabusa Spacecraft arrival at asteroid Itokawa will be between June and August 2005. Departure from the asteroid Itokawa will be in October 2005. Earth return is scheduled to be on June 10, 2007 in western Australia.

Conflict Resolutions – D. Morris

RARB Action Item #1, due date 04/15/2004, and 2b with due date 03/24/2004, are the only open Action Items at this time.

Action Item #1 requested DSMS Engineering to distribute plan for 26m subnet antenna hydraulic system refurbishment. This will then be worked by the Resource Analysis Team to coordinate DSS-16, 46 and 66 downtimes with Operations and Flight Projects.

Action Item #2b requested the Genesis project to investigate alternate antenna support (non-DSN) for Genesis' post-Earth Flyby spacecraft disposal orbit. Response on 04/07/2004 identified Santiago as a possible tracking site. Investigating whether there is sufficient time to coordinate usage, test, and configure software both at JPL and Santiago.

Resource Analysis Team – E. Hampton

For a complete listing of Ongoing and Advanced Planning projects visit the following link for the RAPSO website: <http://rapweb.jpl.nasa.gov/tmodmiss.pdf>

The following spacecraft have revised status since the last RARB.

- Spirit and Opportunity EOEM changed to 09/30/04

- Messenger Launch Date changed to 07/30/04

- Lunar-A Launch Date changed to 08/01/05

- Space Technology 5 Launch Date changed to 12/15/05

- Kepler Acronym changed to KEPL

- Space Interferometry Mission Launch Date changed to 02/14/10

For a complete listing of the DSN Resource Implementation visit the following link for the RAPSO website: <http://rapweb.jpl.nasa.gov/tmodplns.pdf>

The Mid-Range scheduling RAP Team has completed schedule negotiation 30 weeks ahead of real-time with 15 weeks of conflict-free schedules. Conflict resolutions are required for: Weeks 33-42, 44-46, and 48-49.

DSN Downtime Forecast – A. Andujo

For a complete listing of Antenna Downtime Report visit the following link for the RAPSO website:
<http://rapweb.jpl.nasa.gov/planning.htm>

DSN Operations – J. Buckley

There was no presentation given at this month's JURAP.

Goldstone Solar System Radar – M. Slade

Mr. Slade gave a daily detail report on DSS-14 MG Set failure. The MG failed on April 1, 2004 and was returned to service on May 9, 2004. The first operational use had problems with the equipment "upstream" from the MG Set. GSSR track on May 12, 2004 had full power to X-band High Power Transmitter. He also displayed an image of the Near-Earth Asteroid 2001 US16 observed on May 12, 2004.

Radio Astronomy / Special Activities – G. Martinez***Clock Synchronizations activities:***

March -- DOY 103 with DSS-15 and DSS-65, No problems were reported.

Requirements were not met for the month. Requirements are 2 Clock Sync 14 days apart

April – DOY 121 with DSS-15 and DSS-65, No problems were reported.

Requirements were not met for the month. Requirements are 2 Clock Sync 14 days apart

Geodesy Program (SGP) activities:

IVS-T2027 – No problems were reported by DSS-15.

IVS-T2028 – No problems were reported by DSS-15.

Gravity Probe-B Project:

On Tuesday, April 20 at 09:57:24 a.m. PDT, the Gravity Probe-B spacecraft was launched from Vandenberg Air Force Base on a Delta II rocket. All systems are performing as planned. The spacecraft is being controlled from the Gravity Probe-B Mission Control Center at Stanford University.

Experiment BR092A, observed the source HR8703, which is used as a guide star for the Gravity Probe-B mission. This radio source is being observed for extremely accurate position (Astrometry) and measurement of its proper motion in an inertial frame. No problems were reported by DSS-14, DSS-43, or DSS-63.

VLBI Mark 5 Project:

On May 5, 2004 (DOY 126), the first recording of VLBI data to a DSN Mark 5 Recorder was successfully performed at DSS-13. Special thanks to Nancy Vandenberg at GSFC for coordinating the observation and to Lyle Skjerve, Sid Dains, and the DSS-13 staff for operations and antenna setup support.

FLIGHT PROJECTS REPORTS

Cassini – D. Doody

The Saturn Tour Mission began last Friday, 14 May, 2004 with the start of Sequence S-01 execution. New AACS Flight Software (A8.6.7) installation and checkout completed 29 April is operating nominally. The Critical Operations being planned are: TCM 20 – Thursday, May 27; Phoebe Flyby – Friday, June 11, 2004; TCM 21 – Wednesday, June 16, 2004; Placeholder for TCM 22 if needed June 21, 2004; Saturn Orbit Insertion – July 1, 2004 (Burn start = June 30, 19:36 PDT ERT); First Titan Flyby – July 2, 2004; OTM – July 3, 2004; Periapsis Raise Maneuver – August 23, 2004. The DSN and NOPE support has been excellent.

WMAP, ACE, and IMAGE and Genesis – S. Waldherr

Since discontinuing the Z-Axis Control maneuvers, ACE's orbit crosses into the Solar Exclusion Zone (SEZ) every 3 months with smaller and smaller SEV (Sun-Earth-Vehicle) angles. Past data was displayed from the February/March 2004 transit, and the data expectations for the May/June 2004 transit.

Ulysses – B. Brymer

Nominal spacecraft operations continue, plus spacecraft power, thermal reconfigurations, and instrument calibrations are performed as required. Spacecraft Earth –Pointing maneuvers are being performed every 9 days. Per meeting (5/19/2004) with Scheduler and Ulysses Ops, the operational requirements are summarized as: Any gaps between DSN tracks will be no more than 3.5 times longer than the DSN support that follows.

Stardust – S. Waldherr

The Stardust spacecraft is healthy, presently 1.6 AU from Earth with a 00:27:06 RTLT, 2.5 AU from the Sun, and back in cruise mode. The DSMS support has been good this past period. Upcoming events: Minimum Earth Range, June 16, 1.53 AU; Solar Opposition, June 24; Aphelion of 2.68 AU from the Sun, 7 weeks, centered on October 2004, limited communication because of power restrictions; and TCM 16 on April 6, 2005. Information is available at the Stardust Website: <http://stardust.jpl.nasa.gov>

Voyager – J. Hall, S. Howard

There was no presentation given at this month's JURAP, though presentation material is included with the Minutes.

Cluster II, Geotail, Polar, SOHO, and Wind – A. Chang

There was no presentation given at this month's JURAP.

Genesis – E. Hirst / S. Waldherr

There was no presentation given at this month's JURAP.

Mars Global Surveyor – E. Brower / P. Poon

There was no presentation given at this month's JURAP.

Spitzer Space Telescope – C. Scott

There was no presentation given at this month's JURAP.

Mars Odyssey – B. Mase / P. Poon

There was no presentation given at this month's JURAP.

Mars Exploration Rover – B. Compton / B. Toyoshima

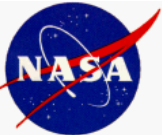
There was no presentation given at this month's JURAP.

INTEGRAL/Mars Express/Rosetta – D. Holmes

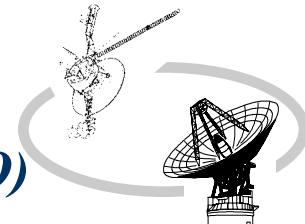
There was no presentation given at this month's JURAP.

Chandra - K. Gage

There was no presentation given at this month's JURAP.



Interplanetary Network Directorate
DEEP SPACE MISSION SYSTEMS (DSMS)



JPL

Resource Allocation Planning & Scheduling Office (RAPSO)

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

Resource Analysis Team

May 20, 2004

Earnestine Hampton



– Ongoing / Approved Projects –

Project	Acronym	Launch or Start	EOPM	EOEM
DSN Antenna Calibration	DSN	--	--	--
DSS Maintenance	DSS	--	--	--
European VLBI Network	EVN	--	--	--
Ground Based Radio Astronomy	GBRA	--	--	--
Reference Frame Calibration	DSN	--	--	--
Space Geodesy	SGP	--	--	--
Voyager 2	VGR2	08/20/77	10/15/89	09/30/07
Voyager 1	VGR1	09/05/77	12/31/80	09/30/07
Goldstone Solar System Radar	GSSR	04/01/85	--	--
Ulysses	ULYS	10/06/90	09/11/95	03/31/08
Geotail	GTL	07/24/92	07/24/95	12/31/08
Wind	WIND	11/01/94	11/01/97	12/31/08
SOHO	SOHO	12/02/95	05/02/98	12/31/08
Polar	POLR	02/22/96	08/23/97	09/30/05
Gravity Probe B (non Spacecraft support)	GPB	06/01/96	05/30/05	TBD
Mars Global Surveyor	MGS	11/07/96	02/01/01	01/03/08
Advance Composition Explorer	ACE	08/25/97	02/01/01	09/30/07

– Ongoing / Approved Projects (continued) –

Project	Acronym	Launch or Start	EOPM	EOEM
Cassini	CAS	10/15/97	06/30/08	06/30/10
Stardust	SDU	02/07/99	01/14/06	- - -
Chandra X-ray Observatory	CHDR	07/23/99	07/24/09	07/24/14
Imager for Magnetopause-to-Aurora Global Exploration	IMAG	03/25/00	05/30/02	09/30/07
Cluster 2 - S/C #2 (Samba)	CLU2	07/16/00	02/15/03	02/28/06
Cluster 2 - S/C #3 (Rumba)	CLU3	07/16/00	02/15/03	02/28/06
Cluster 2 - S/C #1 (Salsa)	CLU1	08/09/00	02/15/03	02/28/06
Cluster 2 - S/C #4 (Tango)	CLU4	08/09/00	02/15/03	02/28/06
Mars Odyssey 2001	M01O	04/07/01	08/24/04	05/29/08
Wilkinson Microwave Anisotropy Probe	WMAP	06/30/01	10/01/03	10/01/07
Genesis	GNS	08/08/01	09/08/04	- - -
Advanced Tracking and Observational Techniques (ATOT)	MEGA	02/01/02	12/31/08	- - -
International Gamma Ray Astrophysics Lab	INTG	10/17/02	12/18/04	12/31/08
Hayabusa (MUSES - C)	MUSC	05/09/03	06/05/07	- - -
Mars Express Orbiter	MEX	06/02/03	02/11/06	08/03/08
Spirit (Mars Exploration Rover - A)	MER2	06/10/03	04/06/04	09/30/04
Opportunity (Mars Exploration Rover - B)	MER1	07/07/03	04/27/04	09/30/04

– Ongoing / Approved Projects (continued) –

Project	Acronym	Launch or Start	EOPM	EOEM
Spitzer Space Telescope (SIRTF)	STF	08/25/03	02/25/06	08/23/08
Rosetta	ROSE	02/26/04	12/31/15	---
Messenger	MSGR	07/30/04	TBD	---
Deep Impact	DIF	12/30/04	08/05/05	---
Lunar - A	LUNA	08/01/05	TBD	---
Mars Reconnaissance Orbiter	MRO	08/10/05	12/31/10	12/31/15
Space Technology 5	ST5	12/15/05	02/27/06	TBD
New Horizons	NHPC	01/10/06	04/17/16	TBD
Stereo Ahead	STA	02/11/06	05/16/08	---
Stereo Behind	STB	02/11/06	05/16/08	---
Dawn	DAWN	06/17/06	07/26/15	TBD

– Advanced / Planning Projects –

Project	Acronym	Launch or Start	EOPM	EOEM
Venus Express *	VEX	10/26/05	08/19/07	TBD
SELENE *	SELE	01/15/06	05/30/06	TBD
Phoenix Scout	PHX	08/09/07	11/04/08	TBD
Kepler	KEPL	10/01/07	09/26/11	TBD
Mars Telecommunications Orbiter 2009	M09T	09/07/09	09/07/16	09/07/20
Mars Science Laboratory 2009	M09L	10/25/09	03/04/12	TBD
Space Interferometry Mission	SIM	02/14/10	06/30/20	TBD
James Webb Space Telescope	JWST	08/01/11	07/31/16	TBD
Mars Placeholder 2011	M11L	10/30/11	09/10/14	TBD
Mars Placeholder 2013	M13O	11/28/13	08/21/16	TBD

* DSN support may not be required for these missions

Complex	Station	Subnet	Delivery Date	S-Band		X-Band		20kW X-Band	Ka-Band		NSP
				Down	Up	Down	Up		Down	Up	
10	DSS-14	70M	✓	✓	✓	✓	✓	✓	N/A	N/A	✓
10	DSS-15	34HEF	✓	✓	N/A	✓	✓	✓	TBD	N/A	✓
10	DSS-16	26M	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
10	DSS-24	34B1	✓	✓	✓	✓	✓	✓	10/23/06	N/A	✓
10	DSS-25	34B2	✓	N/A	N/A	✓	✓	✓	✓	✓	✓
10	DSS-26	34B2	✓	N/A	N/A	✓	✓	✓	✓	N/A	✓
10	DSS-27	34HSB	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	01/31/05
40	DSS-34	34B1	✓	✓	✓	✓	✓	✓	04/11/05	N/A	✓
40	DSS-43	70M	✓	✓	✓	✓	✓	✓	N/A	N/A	✓
40	DSS-45	34HEF	✓	✓	N/A	✓	✓	✓	TBD	N/A	✓
40	DSS-46	26M	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
60	DSS-54	34B1	✓	✓	✓	✓	✓	✓	08/01/07	N/A	✓
60	DSS-55	34B2	✓	N/A	N/A	✓	✓	✓	✓	N/A	✓
60	DSS-63	70M	✓	✓	✓	✓	✓	✓	N/A	N/A	✓
60	DSS-65	34HEF	✓	✓	N/A	✓	✓	✓	TBD	N/A	✓
60	DSS-66	26M	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A

N/A = Capability Not Planned

xx/xx/xx = Capability Date Recently Changed

As of: 04/21/04

✓ ✓ ✓ = Capability Recently Exists ✓ = Capability Exists

◆ RESOURCE NEGOTIATION STATUS

- 2004 WEEKS 25 – 28 (THRU 07/11/2004) WERE RELEASED TO DSN SCHEDULING ON 04/23/2004.
 - 2004 WEEKS 29 - 32 (THRU 08/08/2004) ARE DUE TO BE RELEASED TO DSN SCHEDULING ON 05/21/2004.
 - 2004 WEEKS 33 - 49 (THRU 12/05/2004) ARE AWAITING CONFLICT RESOLUTION
- ◆ The Mid-range Scheduling process has negotiated schedules 30 weeks ahead of real-time. Currently, there are 15 weeks of conflict-free schedules. Conflict Resolution is required for the following fifteen (15) weeks: 33 - 42, 44 - 46, 48 and 49.

◆ COMPLETED SPECIAL STUDIES/ACTIVITIES

- NEW HORIZONS – BEACON VS ONE 8-HOUR PASS/WEEK
- PHOENIX PRELIMINARY LOADING STUDY
- WMAP – ALTERNATE ASSET STUDY

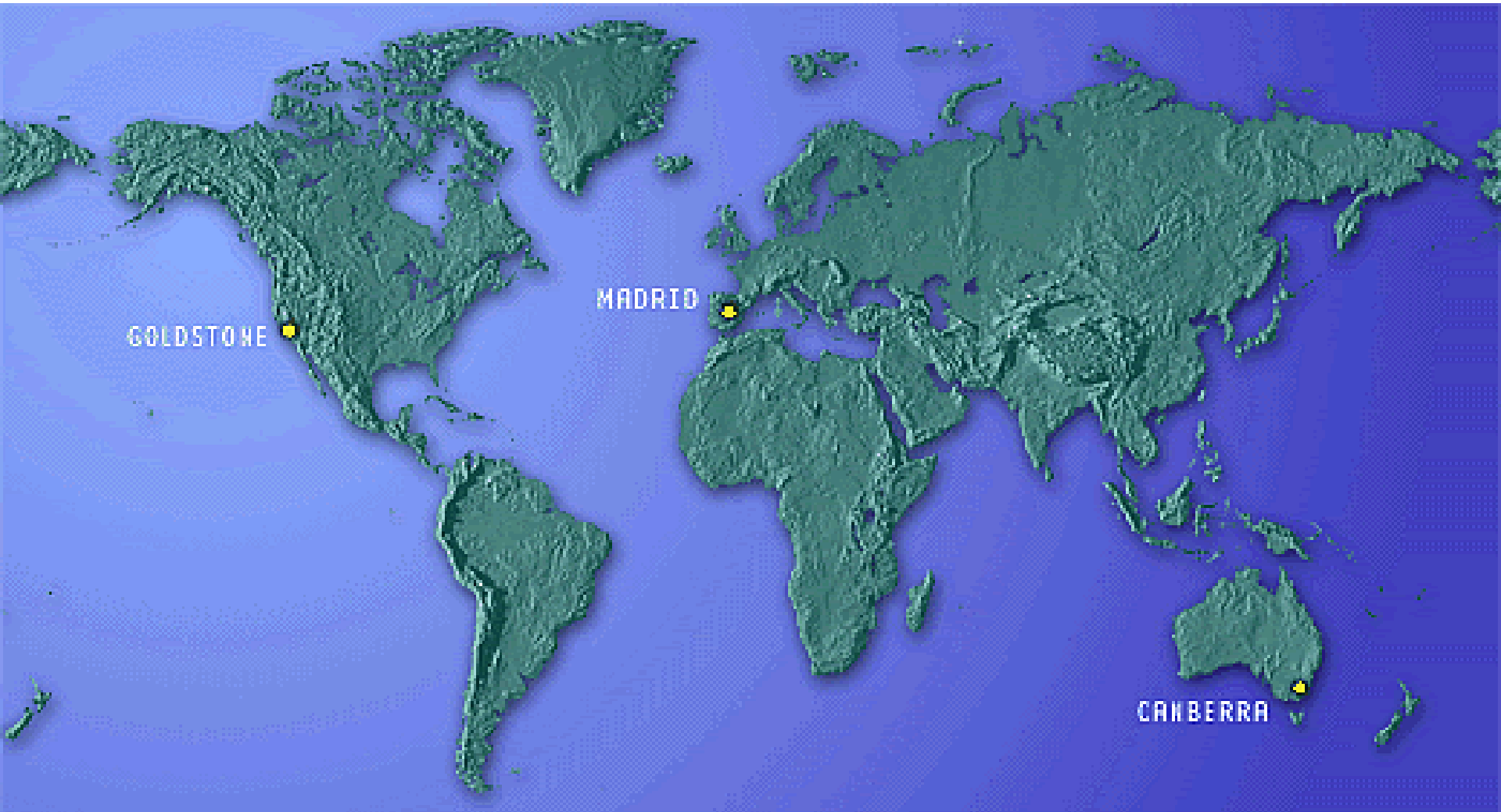
◆ ON-GOING SPECIAL STUDIES/ACTIVITIES

- DOWNTIME PLANNING
- MADB/TIGRAS TESTING AND TRAINING
- GENESIS DISPOSAL/BACKUP ORBIT
- MARS ODYSSEY – UPDATED REQUIREMENTS
- MESSENGER SPECIAL STUDY – POST 2004 REQUIREMENTS
- MARS GLOBAL SURVEYOR – UPDATED REQUIREMENTS
- ROSETTA LOAD STUDY – POST 2004 REQUIREMENTS
- ST-5 SPECIAL STUDY – LAUNCH CHANGE (12/15/05)
- STEREO – NEW LAUNCH DATE (02/11/2006)
- VENUS EXPRESS – RADIO SCIENCE SUPPORT

August 2004 RARB Timeline

Calendar Date	Work Days Remaining	Milestones
05/05/04	67 Days	Distribute Mission Set, Major Events and User Loading Profiles to Projects/Users for verification.
05/25/04	53 Days	Deadline for Projects/User's responses to Mission Set, Major Events, and User Loading Profiles. Last day for Trajectory or Viewperiod updates and submissions.
06/08/04	44 Days	Start preliminary requirements analysis and recommendations
07/13/04	20 Days	Post preliminary Contentions and Recommendations on the RAPWEB for Projects/User's review.
07/13/04	20 Days	NASA Headquarters Science Review
07/23/04	12 Days	Complete Projects/Users Review
08/05/04	3 Days	Post final Contentions and Recommendations on the RAPWEB
08/09/04	1 Day	Distribute booklets to RARB Board Members
08/10/04		Resource Allocation Review Board Meeting

DSN Antenna Downtime Status and Forecast



<http://rapweb.jpl.nasa.gov/planning>

Antenna Downtime Status and Forecast

Changes to 2004 Downtime Schedule

- ❑ There are no outstanding downtime requests for 2004. All previous requests have been negotiated and approved through the RARB, JURAP or Mid-Range Scheduling processes.

Changes to 2005 Downtime Schedule

- ❑ There are no outstanding downtime requests for 2005. All previous requests have been negotiated and approved through the RARB, JURAP or Mid-Range Scheduling processes.

Changes to 2006 Downtime Schedule

- ❑ There are no outstanding downtime requests for 2006. All previous requests have been negotiated and approved through the RARB, JURAP or Mid-Range Scheduling processes.

Changes to 2007 Downtime Schedule

- ❑ There are no outstanding downtime requests for 2007. All previous requests have been negotiated and approved through the RARB, JURAP or Mid-Range Scheduling processes.

Antenna Downtime Status And Forecast Schedule

DSN Antenna Downtime Report

Revised: April 5, 2004

2004							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 43	Antenna Rebalance	05/22/2004 00:00	06/06/2004 22:35	16	21 - 23	143	158
DSS 14	Antenna Controller Replacement	07/07/2004 00:00	12/07/2004 23:59	154	28 - 50	189	342
DSS 14	Hydrostatic Bearing	07/07/2004 00:00	12/07/2004 23:59	154	28 - 50	189	342
DSS 45	Life Extension	08/09/2004 00:00	12/05/2004 23:59	119	33 - 49	222	340
DSS 14	NIB - USC Installation	09/20/2004 00:00	10/03/2004 23:59	14	39 - 40	264	277
DSS 45	NIB - USC Installation	11/22/2004 00:00	12/05/2004 23:59	14	48 - 49	327	340

2005							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 27	NSP Implementation	01/03/2005 00:00	01/30/2005 23:59	28	01 - 04	003	030
DSS 27	NIB - USC Installation	01/10/2005 00:00	01/23/2005 23:59	14	02 - 03	010	023
DSS 63	USC Installation	01/17/2005 00:00	01/30/2005 23:59	14	03 - 04	017	030
DSS 26	USC Installation	01/24/2005 00:00	02/06/2005 23:59	14	04 - 05	024	037
DSS 65	Antenna Controller Replacement	01/31/2005 00:00	07/03/2005 23:59	154	05 - 26	031	184
DSS 65	NIB - USC Installation	01/31/2005 00:00	02/06/2005 23:59	7	05 - 05	031	037
DSS 65	Relocation	01/31/2005 00:00	07/03/2005 23:59	154	05 - 26	031	184
DSS 65	Life Extension	01/31/2005 00:00	07/03/2005 23:59	154	05 - 26	031	184
DSS 34	X/X-Ka Band	02/15/2005 00:00	04/10/2005 23:59	55	07 - 14	046	100
DSS 34	NIB - Azimuth Idler Bearing	02/15/2005 00:00	04/10/2005 23:59	55	07 - 14	046	100
DSS 34	NIB - USC Installation	02/15/2005 00:00	03/06/2005 23:59	20	07 - 09	046	065
DSS 15	USC Installation	04/25/2005 00:00	05/08/2005 23:59	14	17 - 18	115	128
DSS 25	USC Installation	05/30/2005 00:00	06/12/2005 23:59	14	22 - 23	150	163
DSS 24	USC Installation	06/27/2005 00:00	07/03/2005 23:59	7	26 - 26	178	184
DSS 55	USC Installation	07/04/2005 00:00	07/10/2005 23:59	7	27 - 27	185	191
DSS 54	USC Installation	07/11/2005 00:00	07/16/2005 23:59	6	28 - 28	192	197
DSS 43	Antenna Controller Replacement	07/18/2005 00:00	01/01/2006 23:59	168	29 - 52	199	001
DSS 43	NIB - USC Installation	07/18/2005 00:00	07/31/2005 23:59	14	29 - 30	199	212
DSS 43	Hydrostatic Bearing	07/18/2005 00:00	01/01/2006 23:59	168	29 - 52	199	001

2006							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 63	Antenna Controller Replacement	05/22/2006 00:00	09/03/2006 23:59	105	21 - 35	142	246
DSS 24	X/X-Ka Band	09/04/2006 00:00	10/22/2006 23:59	49	36 - 42	247	295
DSS 45	Antenna Controller Replacement	10/16/2006 00:00	12/17/2006 23:59	63	42 - 50	289	351

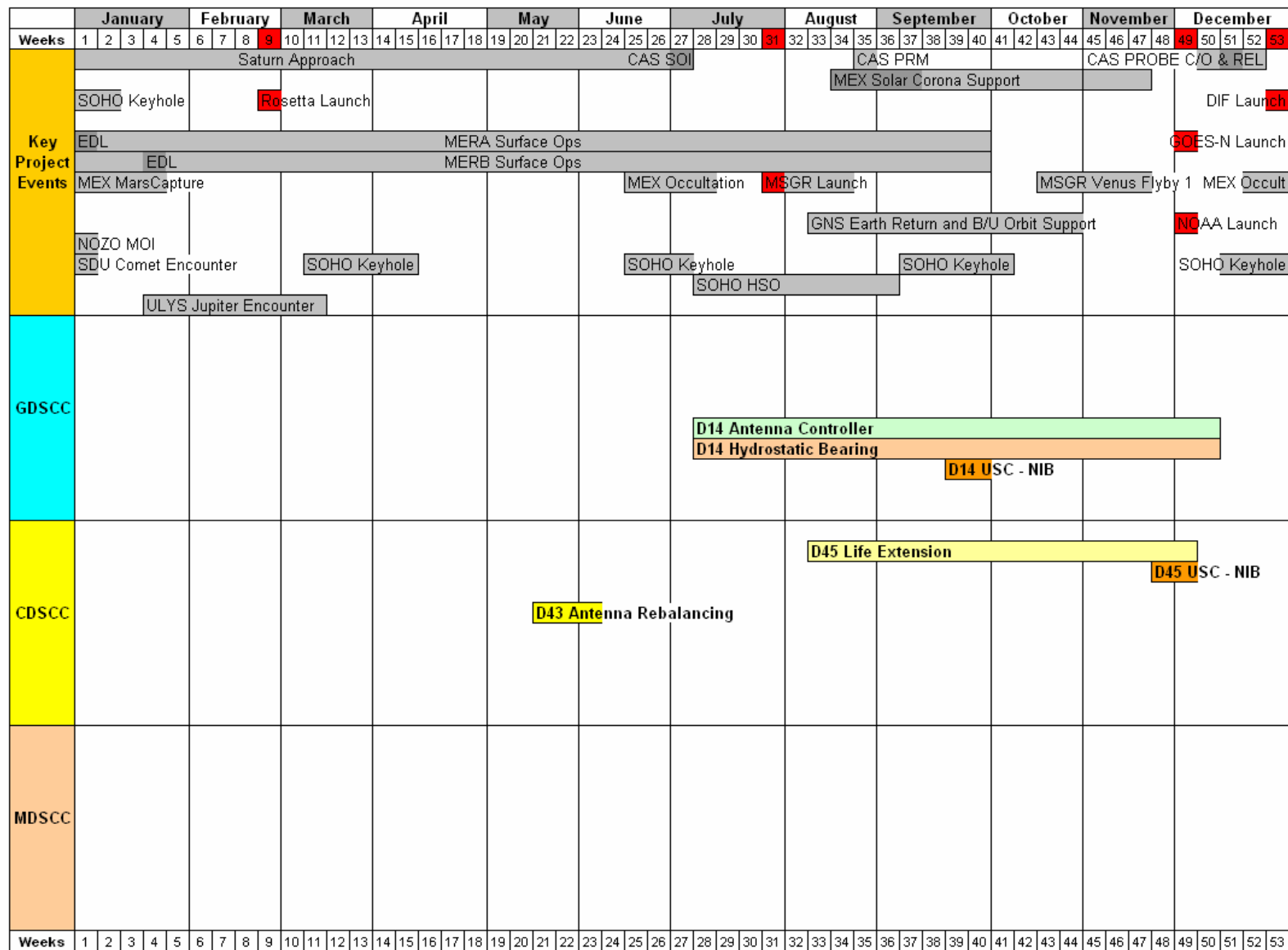
2007							
Site	Description	Start	End	Duration (Days)	Weeks	Start DOY	End DOY
DSS 54	X/X-Ka Band	06/04/2007 00:00	07/29/2007 23:59	56	23 - 30	155	210

<http://rapweb.jpl.nasa.gov>

Although every effort is made to ensure the accuracy of this Downtime Planning report, changes can and do occur.

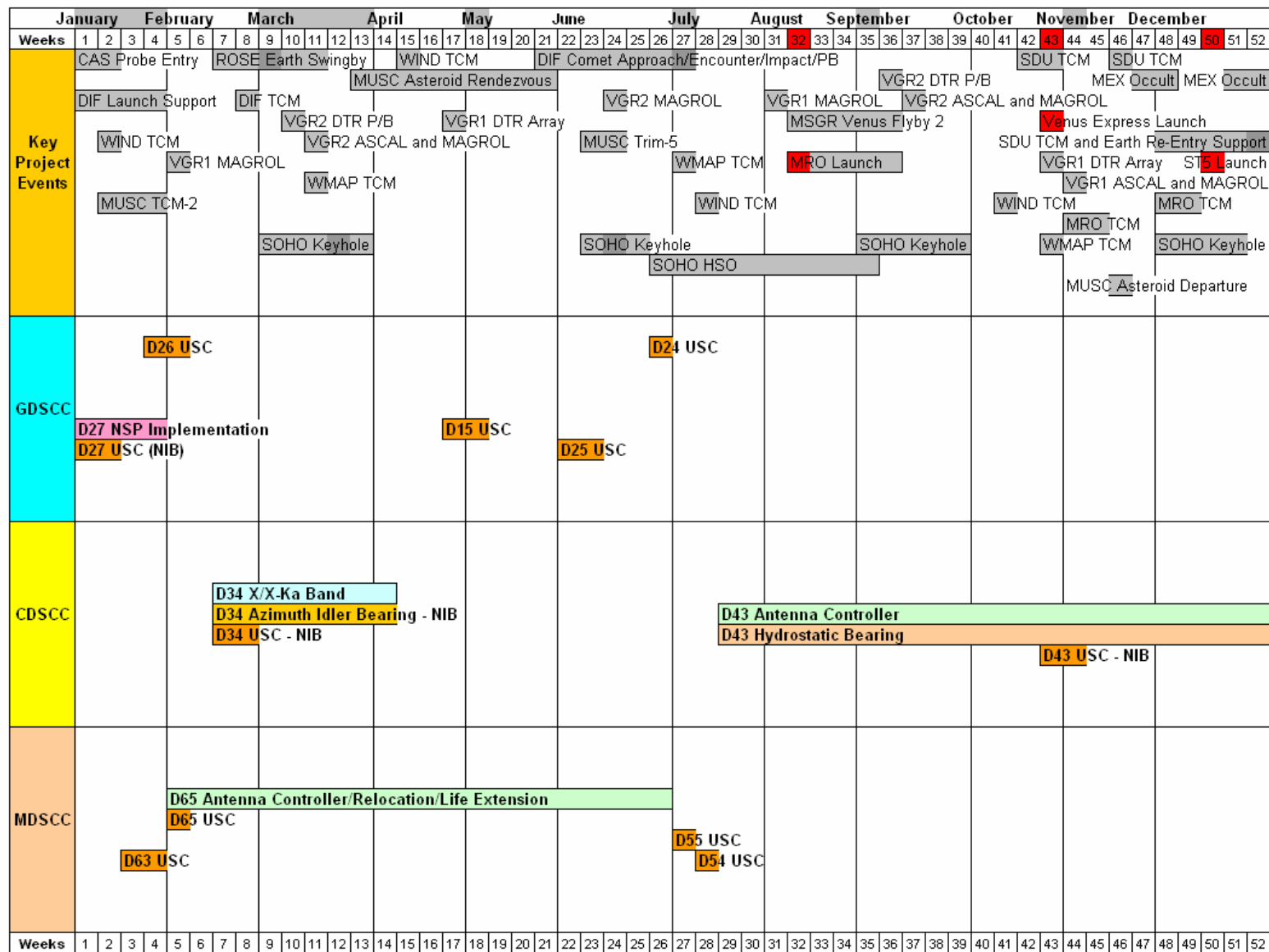
The DSN 7-Day Schedule takes precedence over this document.

Antenna Downtime Status And Forecast 2004



Revised: April 12, 2004

Antenna Downtime Status And Forecast 2005



Revised: ##

Antenna Downtime Status And Forecast 2006

	January				February				March				April				May				June				July				August				September				October				November				December																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	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Revised: April 5, 2004

Antenna Downtime Status And Forecast 2007

	January				February				March				April				May				June				July				August				September				October				November				December															
Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52								
Key Project Events	MRO Prime Science																																																											
	GSSR VK1991				MUSC Re-Entry Phase and Re-Entry																								Phoenix Scout Launch				MSGR Mercury Flyby and TCM				MSGR DSM-1																							
	NHPC Jupiter Approach																MEX Occultation				GSSR Mercury								GSSR Mercury				MSGR TCM				GSSR Mercury																							
	WMAP TCM				NHPC Jupiter Flyby, Checkout				NHPC Jupiter Departure								MSGR TCM								SOHO HSO Continuous				VGR2 DTR P/B				ROSE Earth2 Swingby and Support				SOHO TSO																							
	WIND TCM								VGR2 DTR P/B												VGR2 MAGROL												WMAP TCM				WMAP EOEM				VGR2 MAGROL																			
									VGR2 ASCAL and MAGROL																								NHPC Checkout				NHPC TCM																							
	ROSE Mars Swingby																																				KPLR Science Collection																							
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Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52								

Revised: March 29, 2004

DSN Resource Implementation Planning Matrix by Complex

Complex	Station	Subnet	Delivery Date	S-Band		X-Band		20kW X-Band	Ka-Band		NSP
				Down	Up	Down	Up		Down	Up	
10	DSS-14	70M	✓	✓	✓	✓	✓	✓	N/A	N/A	✓
10	DSS-15	34HEF	✓	✓	N/A	✓	✓	✓	TBD	N/A	✓
10	DSS-16	26M	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
10	DSS-24	34B1	✓	✓	✓	✓	✓	✓	10/23/06	N/A	✓
10	DSS-25	34B2	✓	N/A	N/A	✓	✓	✓	✓	✓	✓
10	DSS-26	34B2	✓	N/A	N/A	✓	✓	✓	✓	N/A	✓
10	DSS-27	34HSB	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	01/31/05
40	DSS-34	34B1	✓	✓	✓	✓	✓	✓	04/11/05	N/A	✓
40	DSS-43	70M	✓	✓	✓	✓	✓	✓	N/A	N/A	✓
40	DSS-45	34HEF	✓	✓	N/A	✓	✓	✓	TBD	N/A	✓
40	DSS-46	26M	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
60	DSS-54	34B1	✓	✓	✓	✓	✓	✓	08/01/07	N/A	✓
60	DSS-55	34B2	✓	N/A	N/A	✓	✓	✓	✓	N/A	✓
60	DSS-63	70M	✓	✓	✓	✓	✓	✓	N/A	N/A	✓
60	DSS-65	34HEF	✓	✓	N/A	✓	✓	✓	TBD	N/A	✓
60	DSS-66	26M	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A

N/A = Capability Not Planned

xx/xx/xx = Capability Date Recently Changed

As of: 04/21/04

✓ ✓ ✓ = Capability Recently Exists ✓ = Capability Exists

DSN Resource Implementation Planning Matrix by Subnet

Complex	Station	Subnet	Delivery Date	S-Band		X-Band		20kW X-Band	Ka-Band		NSP
				Down	Up	Down	Up		Down	Up	
10	DSS-16	26M	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
40	DSS-46	26M	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
60	DSS-66	26M	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	N/A
10	DSS-27	34HSB	✓	✓	✓	N/A	N/A	N/A	N/A	N/A	01/31/05
10	DSS-24	34B1	✓	✓	✓	✓	✓	✓	10/23/06	N/A	✓
40	DSS-34	34B1	✓	✓	✓	✓	✓	✓	04/11/05	N/A	✓
60	DSS-54	34B1	✓	✓	✓	✓	✓	✓	08/01/07	N/A	✓
10	DSS-25	34B2	✓	N/A	N/A	✓	✓	✓	✓	✓	✓
10	DSS-26	34B2	✓	N/A	N/A	✓	✓	✓	✓	N/A	✓
60	DSS-55	34B2	✓	N/A	N/A	✓	✓	✓	✓	N/A	✓
10	DSS-15	34HEF	✓	✓	N/A	✓	✓	✓	TBD	N/A	✓
40	DSS-45	34HEF	✓	✓	N/A	✓	✓	✓	TBD	N/A	✓
60	DSS-65	34HEF	✓	✓	N/A	✓	✓	✓	TBD	N/A	✓
10	DSS-14	70M	✓	✓	✓	✓	✓	✓	N/A	N/A	✓
40	DSS-43	70M	✓	✓	✓	✓	✓	✓	N/A	N/A	✓
60	DSS-63	70M	✓	✓	✓	✓	✓	✓	N/A	N/A	✓

N/A = Capability Not Planned

xx/xx/xx = Capability Date Recently Changed

As of: 04/21/04

✓ ✓ ✓ = Capability Recently Exists ✓ = Capability Exists

Muses-C/Hayabusa

Presentation to:
Joint Users Resource Allocation Planning Committee

Mark Ryne

May 20, 2004

<http://www.isas.jaxa.jp/e/enterp/missions/muses-c/index.shtml>



Summary of 2004 Activities

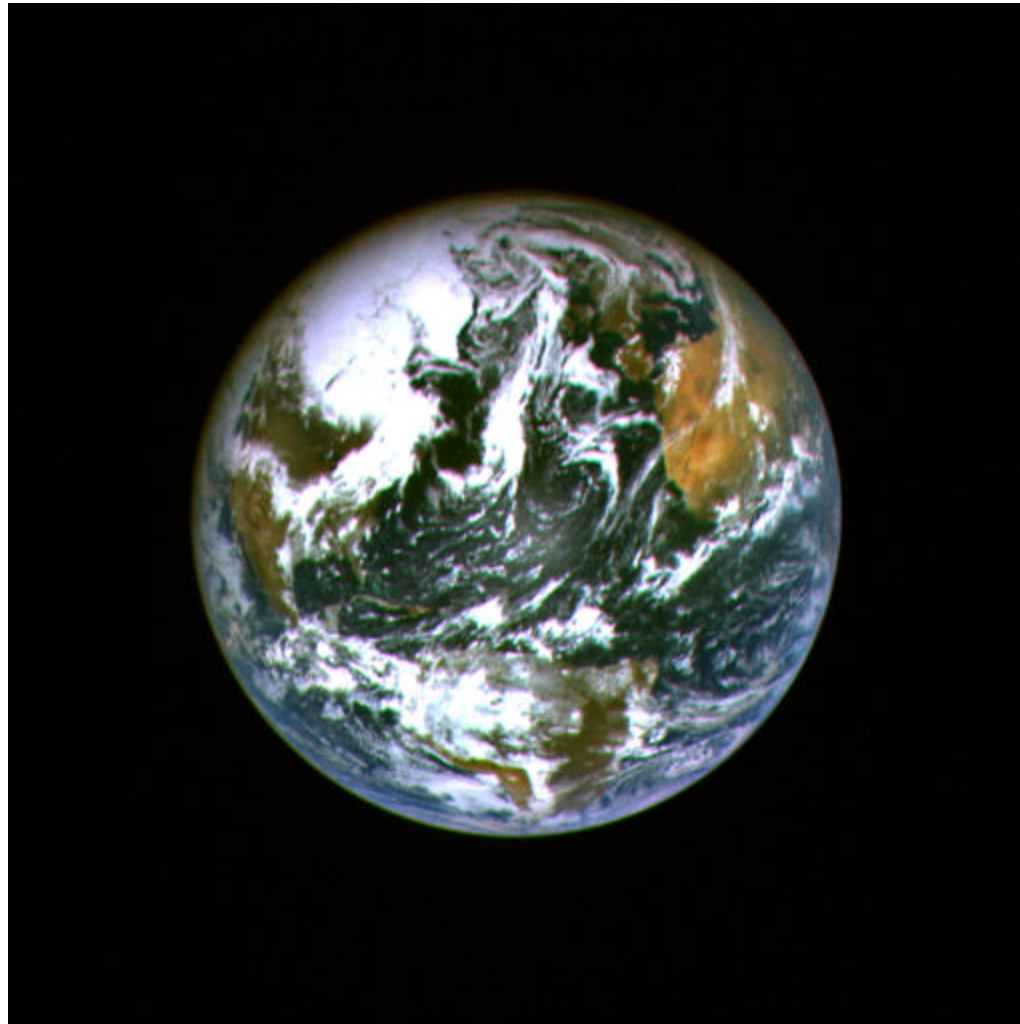
MUSES-C/Hayabusa

- **Spacecraft begins ballistic flight on April 1, 2004**
- **DSN tracking resumes to support Earth swing-by**
 - **Doppler and range data, ?DOR and navigation**
- **Trajectory correction maneuvers target Earth swing-by**
 - **TCM-1 : 13 cm/sec on April 20, 2004**
 - **TRIM-3 : 15 cm/sec on May 12, 2004**
- **Earth swing-by on May 19, 2004 at an altitude of 3728 km**
 - **Navigation delivery error less than one km !!!**
- **Execution of post swing-by trajectory correction maneuver is considered very unlikely**
- **Ion engine operation expected to resume in less than one week**



Earth Swing-by Portrait

MUSES-C/Hayabusa





Future Plans

MUSES-C/Hayabusa

- **Mission events**
 - Arrival at asteroid Itokawa between June-August 2005
 - Departure from asteroid Itokawa in October 2005
 - Earth return on June 10, 2007 to western Australia
- **DSN support summary**
 - Periods of DSN tracking around maneuvers
 - Doppler and range data, ?DOR and navigation
 - Next DSN tracking in December 2004 to support TCM-2
 - DSN support for science operation at comet Itokawa
 - Telemetry and command when the spacecraft is out of view of the Japanese domestic tracking stations
 - Doppler and range data as needed during science phase
 - Significant DSN support during Earth return
 - Doppler and range data, ?DOR and navigation



Jet Propulsion Laboratory
California Institute of Technology

Interplanetary Network Directorate (IND)
Deep Space Mission System (DSMS)

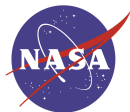
Joint Users Resource Allocation Planning (JURAP)



Action Item Status From 10 February 2004 RARB (Resource Allocation Review Board)

May 20, 2004

David G. Morris



Joint Users Resource Allocation Planning (JURAP)



Action Item Summary

<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
01	2004-5		DSMS Engineering	J. Osman J. Cucchissi	04/15/2004	Open

ACTION: (a.k.a. 8/13/2004 RARB A.I.#5) Distribute plan for 26m subnet antenna hydraulic system refurbishment. This will then be worked by the Resource Analysis Team to coordinate DSS-16, 46 and 66 downtimes with Operations and Flight Projects.

RESPONSE: (9/10/2003 & 1/28/2004) Changed due date as it will take extended time to plan new implementation dates.



Joint Users Resource Allocation Planning (JURAP)



Action Item Summary

<i>AI#</i>	<i>Year</i>	<i>Month(s)</i>	<i>System</i>	<i>Responsible</i>	<i>Due Date</i>	<i>Status</i>
02a	2004- 2005	September- February	Genesis	S. Waldherr E. Hirst	04/15/2004	Closed

ACTION: Presentation by Genesis on mission requirement changes resulted in an action on HQ to provide direction regarding DSN support for Genesis' post-Earth Flyby spacecraft disposal orbit. It is important that consultation with impacted users (e.g., Chandra and ISTP missions) is part of this action if DSN coverage is determined to be used. Per the request of NASA HQ (03/, DSMS and Project are working on a compromise. The goal of the compromise is to minimize scheduling impact to other DSMS customers, yet still address risk mitigation for the Genesis mission (disposal orbit/first 60 days of backup orbit).

RESPONSE: (4/12/2004) DSMS has reviewed the DSN loading and Genesis proposal as listed below. DSMS proposal is acceptable to DSMS. Genesis support request extending 90 days beyond September 8, 2004, covering the Disposal/Backup Orbit:

DOY 2004/253-266 : 2 weeks : near-continuous (full viewperiods), 34-m

DOY 2004/267-280 : 2 weeks : one 8-hr track per day, 34-m

DOY 2004/281-308 : 4 weeks : two 4-hr tracks per week, 34-m

DOY 2004/309-336 : 4 weeks : one 4-hr track per week, 34-m

It should be Noted:The DSMS resource allocation process has already successfully worked Genesis schedule through Doy 298. The remainder Genesis support request is currently being worked and is expected to be accommodated.



Joint Users Resource Allocation Planning (JURAP)



Action Item Summary

<i><u>AI#</u></i>	<i><u>Year</u></i>	<i><u>Month(s)</u></i>	<i><u>System</u></i>	<i><u>Responsible</u></i>	<i><u>Due Date</u></i>	<i><u>Status</u></i>
02b	2004- 2005	September- February	Genesis	S. Waldherr E. Hirst	03/24/2004	Pending

ACTION: Presentation by Genesis on mission requirement changes resulted in an action to investigate alternate antenna support (non-DSN) for Genesis' post-Earth Flyby spacecraft disposal orbit.

RESPONSE: (4/7/2004) Identified Santiago as a possible tracking site. Investigating whether there is sufficient time to coordinate usage, test, and configure software both at JPL and Santiago.



Joint Users Resource Allocation Planning (JURAP)



Action Item Summary

<u>AI#</u>	<u>Year</u>	<u>Month(s)</u>	<u>System</u>	<u>Responsible</u>	<u>Due Date</u>	<u>Status</u>
03	2005	September	Cassini	D. Seal	2/17/2004	Closed

ACTION: Identify the 70M antenna that Cassini needs in week 38. The recommendation is to use DSS-63 while DSS-43 is in approved downtime.

RESPONSE: (02/10/2004) Cassini clarified that they have no issue with the recommendation as they are specifically requesting DSS-63 (twice) for 70M coverage in week 38.

<u>AI#</u>	<u>Year</u>	<u>Month(s)</u>	<u>System</u>	<u>Responsible</u>	<u>Due Date</u>	<u>Status</u>
04	2007	May	GBRA EVN	P. Wolken	02/17/2004	Closed

ACTION: Review EVN and GBRA events in the month based upon the recommendations and determine what is acceptable to both.

RESPONSE: (02/10/2004) Both the GBRA RA500 and the EVN need to occur before June 10, but not sooner than May 20. The RA500 activity will remain in Week 21 and agree to reduce support duration from 24 hours to 12 hours.

Goldstone Solar System Radar



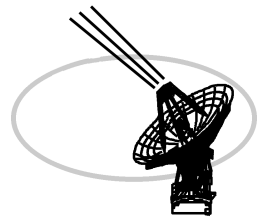
JPL9015 dc

Martin A. Slade

May 20, 2004

NASA Jet Propulsion Laboratory

Joint Users Resource Allocation Planning Committee Meeting



•The DSS-14 MG Set : detailed story - what happened when

- April 1 - MG fails due to a blown field power supply for the generator. Investigation that day revealed the destroyed lead.
- April 2 - Motor, Generator & Clutch removed and prepared for shipment. GE unable to receive equipment until following day.
- April 3 - Generator transported to the GE Service Center in Anaheim. Generator disassembled, cleaned & baked.
- April 4 - Generator cooldown.
- April 5 - Motor & Clutch transported. Generator physical inspection. GE informed us of the generator rotor collar problem.
- April 6 - We visited the facility to inspect damage and discuss options. Electrical testing of generator. •Requested a quote on a rotor rewind.
- April 7 - GE worked the estimate, continued disassembly of motor & clutch
- April 8 - GE worked the estimate, cleaned & baked motor.
- April 9 - By 1-2 PM we received estimate & decision was made to perform a rewind of the rotor. Material could not be ordered as their East Coast operations had left for the day. Disassembly of rotor begins.
- April 10 - Disassembly continues. Poles shipped to factory as removed.
- April 11 - Motor inspected, bearing journal on shaft found to be damaged due to excessive wear.
- April 12 - GE working estimate for shaft repair and abatement of asbestos leads discovered in generator CT/PT enclosure. Material for rewind ordered.
- April 13 - 19 Manufacture pole piece tapers. Rewind individual poles at the factory, expected completion by April 26th. Delivered motor to chrome shop for shaft repair.

• DSS-14 MG Set Story (cont.)

April 22 - Clutch is done. Motor still in chrome shop, grinding to be finished in following week. Asbestos leads replaced.

April 23 - Clutch is returned.

April 27 Poles returned from factory. Begin assembly.

April 30 - Drop test on generator reveals bad pole. Also discover that the motor absorbed vapor and has a poor megohmmeter reading. ETR of May 2nd changed to May

7th. Ordered material for the pole rewind. Freeze motor shaft in preparation for ring installation.

May 1, Saturday: Motor; Install rings, machine and balance.

May 2, Sunday: Motor; Bake rotor.

May 3, Monday: Generator; Rewind (1) pole | Motor; Assemble.

May 4, Tuesday: Generator; Install pole | Motor; Final test, paint, ship.

May 5, Wednesday: Generator; Machine rings, assemble.

May 6, Thursday: Generator; Final test.

May 7, Friday: Generator; Paint, ship [Friday, May 7th]

May 7 - Received generator @ ~ 0300. MG aligned and tested up to 450kW by 1730 Local. Noted discrepancies below and contacted GE.

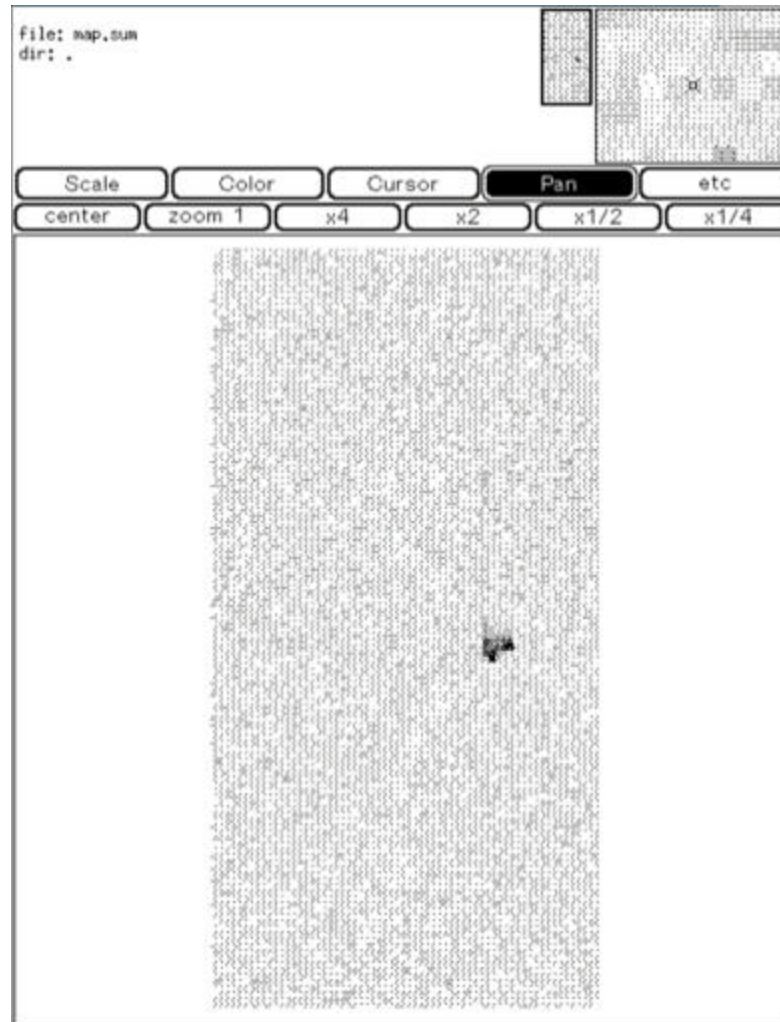
Discrepancies:

On May 7th, we found a few problems with the work performed.

The eddy current clutch leaks from 3 locations. The leaks are minor, but we shouldn't have any leaks at all. It also produced vapor/smoke for a minute or so, which may have been a normal startup phenomenon. The key that retains the coupler on the generator shaft was moving freely in the keyway. We had to secure it with a setscrew after drilling and tapping. The bearing cover ring was askew and upon rotation it was grinding into the housing. It has been forced loose and is rotating freely about the shaft. The temperature probe monitor SO cord was badly damaged as the insulation was gone in several spots. We replaced the cable."

The MG Set was returned to service on May 9, 2004. The first operational use had problems in equipment "upstream" from the MG Set. GSSR track on May 12, 2004, had full power to X-band High Power Transmitter.

Near-Earth Asteroid 2001 US16 -one snapshot from May 12, 2004



120 seconds of integration clearly shows binary asteroid

Interplanetary Network Directorate

Joint Users Resource Allocation and Planning Committee

Radio Astronomy & Special Activities

JPL



ITT Industries

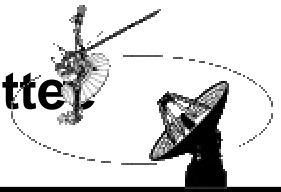
George Martinez

May 20, 2004



Joint Users Resource Allocation and Planning Committee

Radio Astronomy & Special Activities



JPL

Time and Earth Motion Precision Observations (TEMPO)

- **March**
 - **DOY 103**
 - No problems were reported by either DSS-15 or DSS-65.
 - The data tapes were shipped to the JPL correlator for processing.
 - Project requirements were not met for the month.
 - Requirements are: Two Clock Syncs approximately 14 days apart.
- **April**
 - **DOY 121**
 - No problems were reported by either DSS-15 or DSS-65.
 - The data tapes were shipped to the JPL correlator for processing.
 - Project requirements were not met for the month.
 - Requirements are: Two Clock Syncs approximately 14 days apart.

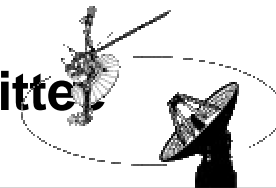


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JPL

Space Geodesy Program (SGP)

- **IVS-T2027**
 - The objective of the IVS-T2 sessions is to monitor the Terrestrial Reference Frame (TRF) via monthly sessions. All geodetic stations participate in at least three T2 sessions each year. These sessions replace the IRIS-S sessions observed in previous years.
 - No problems were reported by DSS-15.
 - The data tape was shipped to the Washington correlator for processing.
- **IVS-T2028**
 - The objective of the IVS-T2 sessions is to monitor the Terrestrial Reference Frame (TRF) via monthly sessions. All geodetic stations participate in at least three T2 sessions each year. These sessions replace the IRIS-S sessions observed in previous years.
 - No problems were reported by DSS-15.
 - The data tape was shipped to the Washington correlator for processing.
- **Metrics**
 - 100.0% of data time utilized.

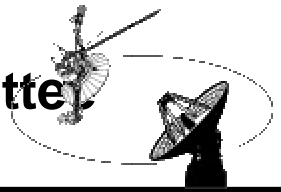


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JPL

Gravity Probe-B

- On Tuesday, April 20 at 09:57:24 a.m. PDT, the Gravity Probe-B spacecraft was launched from Vandenberg Air Force Base on top of a Delta II rocket
- At approximately L+ 1h 11m, the spacecraft solar arrays were deployed.
- All systems are performing as planned.
 - Solar arrays are generating power.
 - All electrical systems are powered on.
- The spacecraft is communicating well with the Tracking and Data Relay Satellite (TDRSS) and supporting ground stations.
- The spacecraft has achieved a science mission orbit, within the plane of the guide star with an inclination error 1/6 of that expected.
- All 4 gyro suspension systems have been activated.
 - The gyro system is performing significantly better than it did during ground testing.
- The spacecraft attitude and control system is maintaining initial attitude control.
 - Fine attitude control will be achieved after calibrations are complete.
 - The ultra-precise science telescope will be locked onto the Gravity Probe-B guide star, IM Pegasus, to within a range of 1/100,000th of a degree.

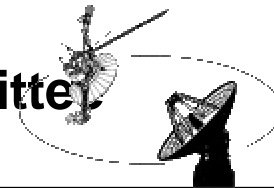


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JPL

Gravity Probe-B - Continued

- The spacecraft is being controlled from the Gravity Probe-B Mission Control Center at Stanford University.
- The Initialization & Orbit Checkout (IOC) phase of the Gravity Probe-B mission is planned to last 45 – 60 days, after which the 12 month science collection will begin.
- **BR092A**
 - This experiment observed the source HR8703, which is used as a guide star for the Gravity Probe-B mission. This radio source is being observed for extremely accurate position (Astrometry) and measurement of its proper motion in an inertial frame.
 - Only Astrometric VLBI can yield this accuracy.
 - No problems were reported by DSS-14, DSS-43, or DSS-63.
 - The data tapes were sent to the Socorro correlator for processing.

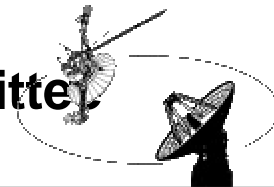


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JPL

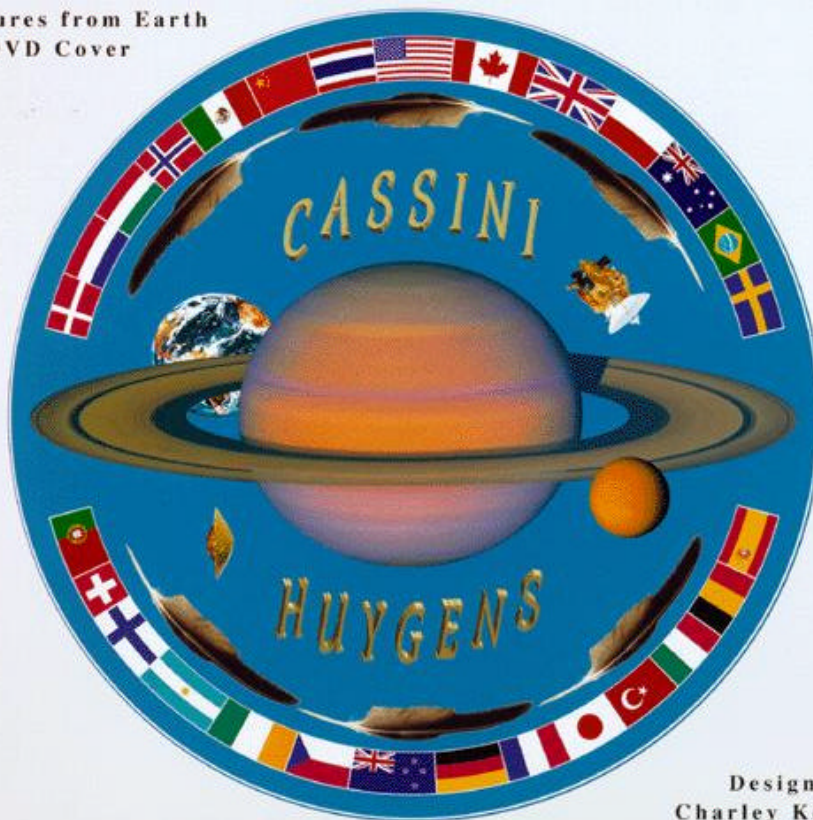
VLBI Mark 5

- On May 5, 2004 (DOY 126), the first recording of VLBI data to a DSN Mark 5 Recorder was successfully performed at DSS-13.
 - The 34m BWG at DSS-13 was used in conjunction with the antennas at Kokee Park and Westford for a 3-baseline, 2-hour pass.
 - The PCFS was used to control the Mark 5 hardware via Mark 5 software commands.
- The Disk-Module was shipped to the Washington Correlator for analysis.
- The correlator reports that fringes were found.
 - These are the first fringes for the DSN Mark 5 system.
- Special thanks to:
 - Nancy Vandenberg at GSFC for coordinating the observation
 - Lyle Skjerve, Sid Dains, and the DSS-13 staff for operations and antenna setup support.



ITT Industries

Signatures from Earth
DVD Cover



Design by
Charley Kohlhasse

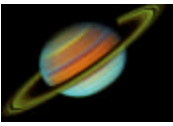
CASSINI

<http://saturn.jpl.nasa.gov/cassini/index.shtml>

Joint Users Resource Allocation Planning (JURAP) Committee Meeting

Dave Doody
May 20, 2004

NASA / Jet Propulsion Laboratory



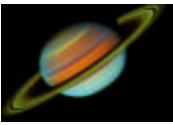
Cassini / Huygens

- **Operating in Saturn Tour Phase**

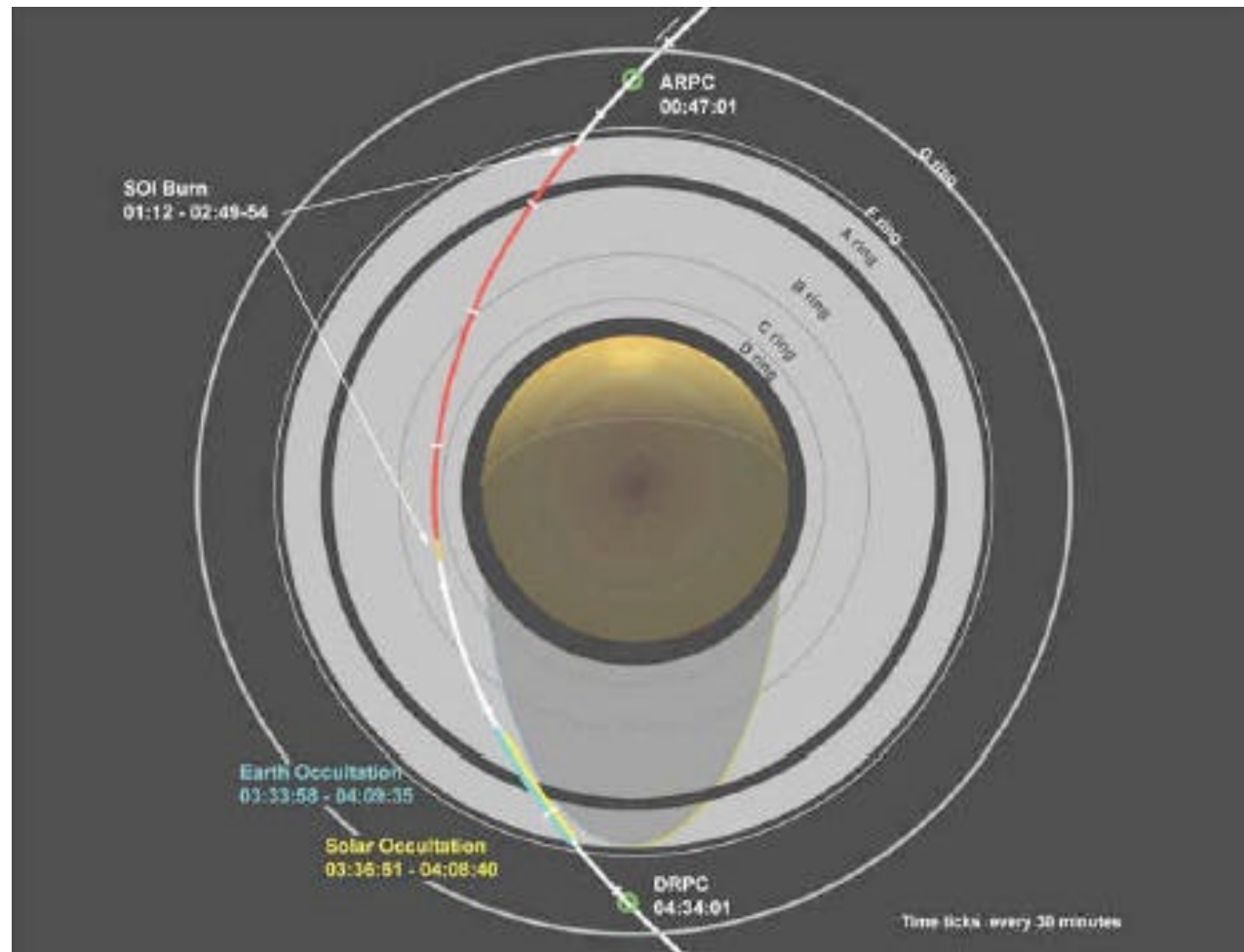
- Saturn Tour Mission Phase began last Friday 14 May 2004 with the start of Sequence S-01 execution
 - Between DSN supports, Spacecraft is off earthpoint, observing Saturnian system
 - Optical Navigation images are included, to refine ephemerides of the known satellites
 - During DSN supports, spacecraft is rolling to collect Fields & Particles data, or rocking, for CDA (Cassini rocks!)
- New AACCS Flight Software (A8.6.7) installation and checkout completed 29 April, operating nominally

- **Critical Operations begin next week**

- TCM20 Thursday May 27 (Operational configuration is similar to Saturn Orbit Insertion burn)
- Phoebe flyby Friday June 11, 2004
- TCM21 Wednesday June 16, 2004
- Placeholder for TCM22 if needed June 21, 2004
- **Saturn Orbit Insertion July 1, 2004 (Burn start = June 30, 19:36 PDT ERT)**
- First Titan flyby (339,000 km) July 2, 2004
- OTM-1 July 3, 2004
- Periapsis (perichron) raise maneuver 23 August, 2004



Cassini / Huygens



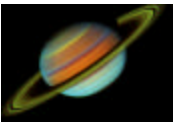
Cassini-Huygens Saturn Arrival Geometry

Times shown are UTC SCET

ARPC: Ascending Ring Plane Crossing

DRPC: Descending Ring Plane Crossing

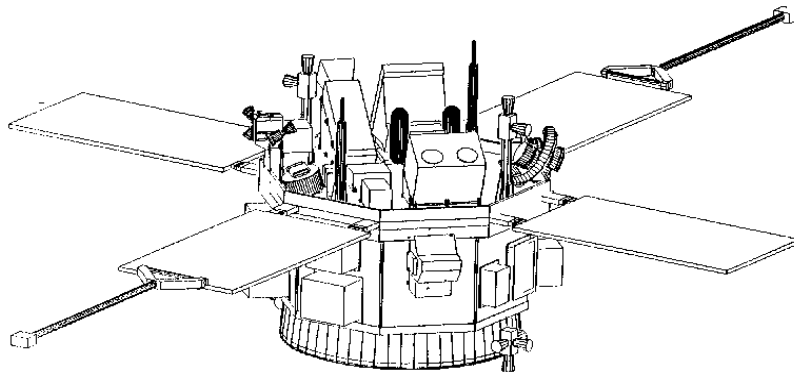
SOI: Saturn Orbit Insertion main engine burn



Cassini / Huygens

- **Preparations for SOI, Tour, and Huygens Playback continue**
 - Advanced science planning for Tour (ongoing)
 - Huygens Playback data delivery planning (ongoing)
 - Critical Event Readiness Review held 1 April, 2004
 - DSMS Mission Events Readiness Review held 5 May 2004
 - External (Tom Young) Readiness Review held Monday 17 May 2004
 - Internal Readiness Review held yesterday 19 May 2004
 - NASA/JPL (Weiler/Elachi) Readiness Review next Monday 24 May 2004
 - Operational Readiness Tests 9 April through 1 May, and on 9 May (Integrated Test Lab activities)

- **Daily ops continue to go well**
 - DSN and NOPE support has been excellent
 - NOP has been revised. No OPDs currently in effect
 - New TLM lockup times apply now in Tour Mission Phase. Science return and OPNAVs depend on:
 - 5 min at BOT
 - 1 min at TLM mode changes
 - Exercising continuing FSPA Array supports as they can be scheduled
 - Working various minor S/C instrument anomalies, FSW installations
 - Ka-Translator characterization 15 May - recovery does not look any more hopeful
 - Mitigation of NOCC-R/T display system demise being implemented
 - Displays slaved to TSS NMC workstation being installed at Cassini Ace location as resolution



ACE SWT Meeting May 20, 2004

John Lakin/HTSI/ACE FOT

Craig Roberts/SAIC/ACE FDF

Jackie Snell/GSFC/HTSI

FOT Mgr

Jacqueline.Snell@gsfc.nasa.gov

(301) 286-7072

Bob Sodano /GSFC/581/444

ACE Mission Director

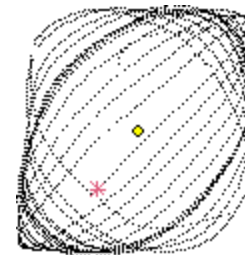
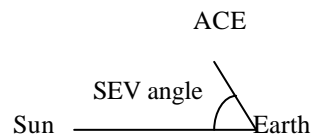
Robert.J.Sodano@nasa.gov

(301) 286-6506



INTRODUCTION

- Since discontinuing the Z-Axis Control maneuvers, ACE's orbit has crossed into the Solar Exclusion Zone (SEZ) every 3 months with smaller and smaller SEV (Sun-Earth-Vehicle) angles.
- The following slides provide data from the Feb/March 2004 transit and the expectations for the May/June 2004 transit.
- 12/08/2003 minimum SEV=1.18°
- 03/03/2004 minimum SEV=0.63°
- 06/01/2004 crossing the solar disc as seen from earth





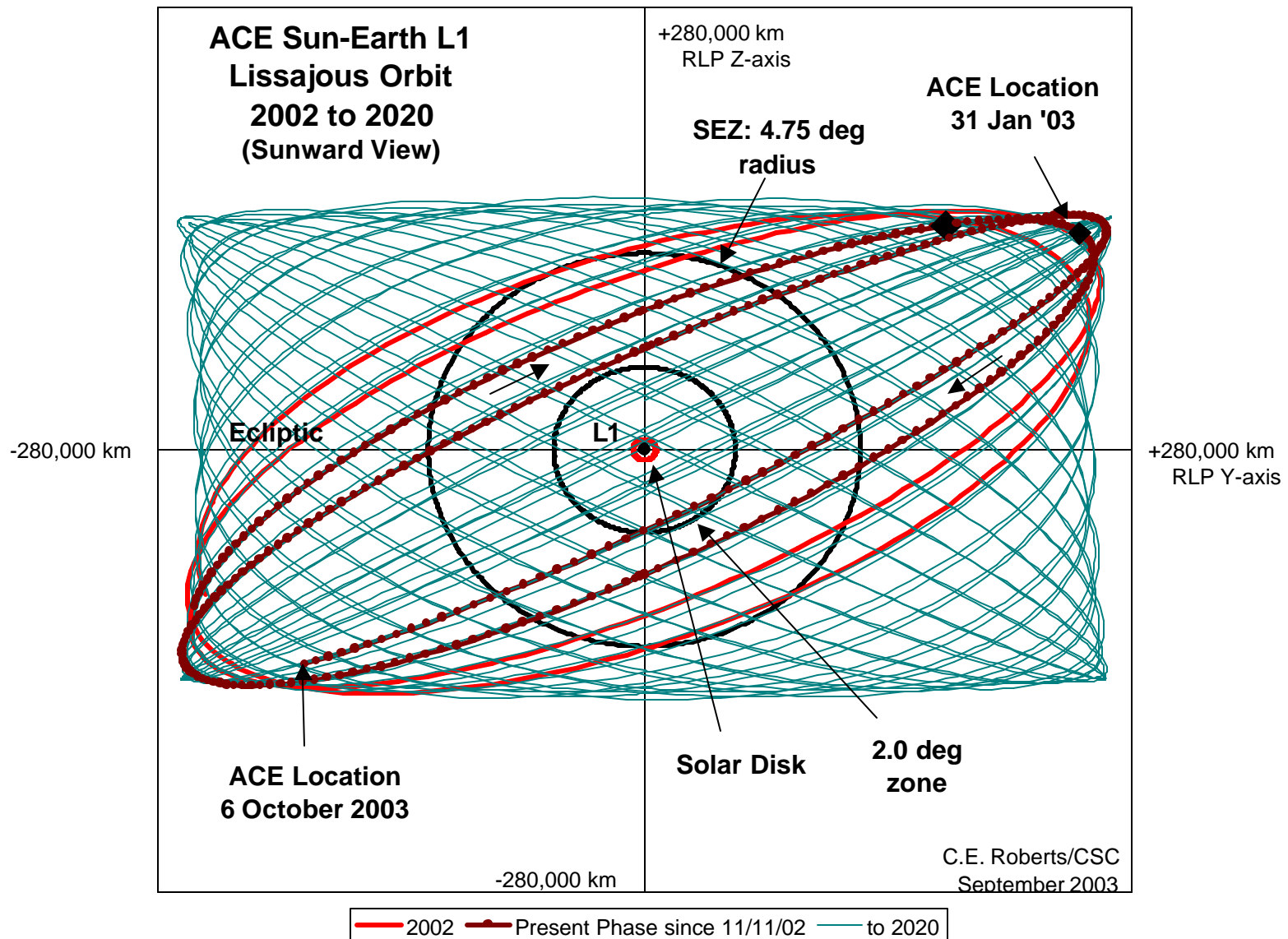
ACE Lissajous Orbit SEZ Transits



- Latest SEZ transit concluded in mid-March
- Minimum Sun-Earth-ACE angle achieved during that latest transit was 0.63 degree
- The Lissajous--currently executing clockwise motion as viewed from Earth--is in its final stages of collapse toward L1
- The transition from a collapsing phase to an opening phase will be complete in July 2004
- This transition means counterclockwise motion will commence, continuing until the next collapse in 2011 – 2012
- The 19 May - 14 June 2004 transit will record the lowest SEV angle (0.2 deg on June 1) for this series of transits
- There will be a transit of the solar disk on June 1 lasting about 21 hours
- The first transit of the opening phase will run from approximately Aug. 19 to Sept. 11, 2004 (minimum SEV approx. 0.31 deg)



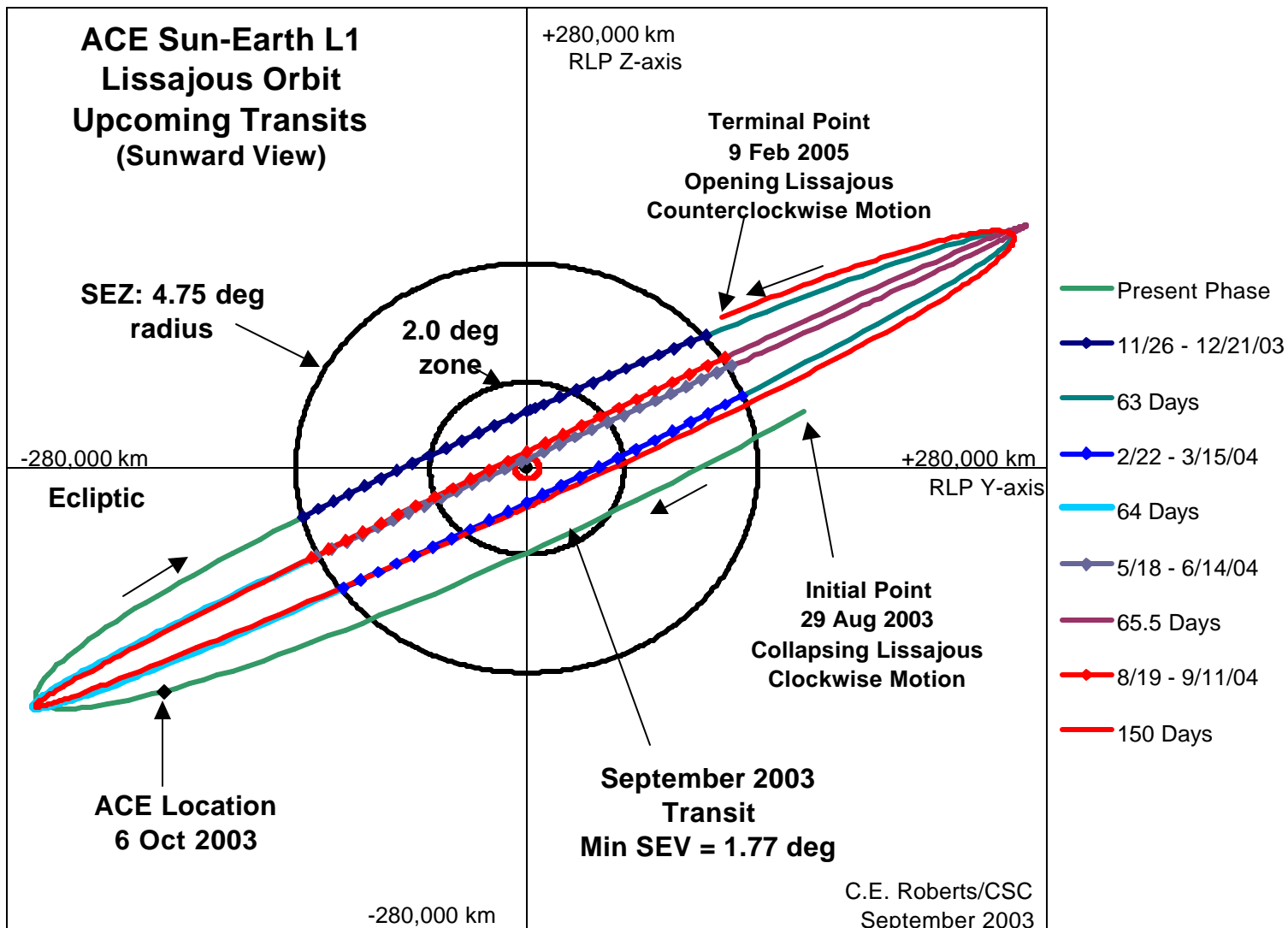
ACE Lissajous Orbit Plotted to Year 2020





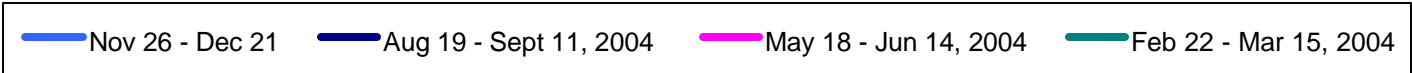
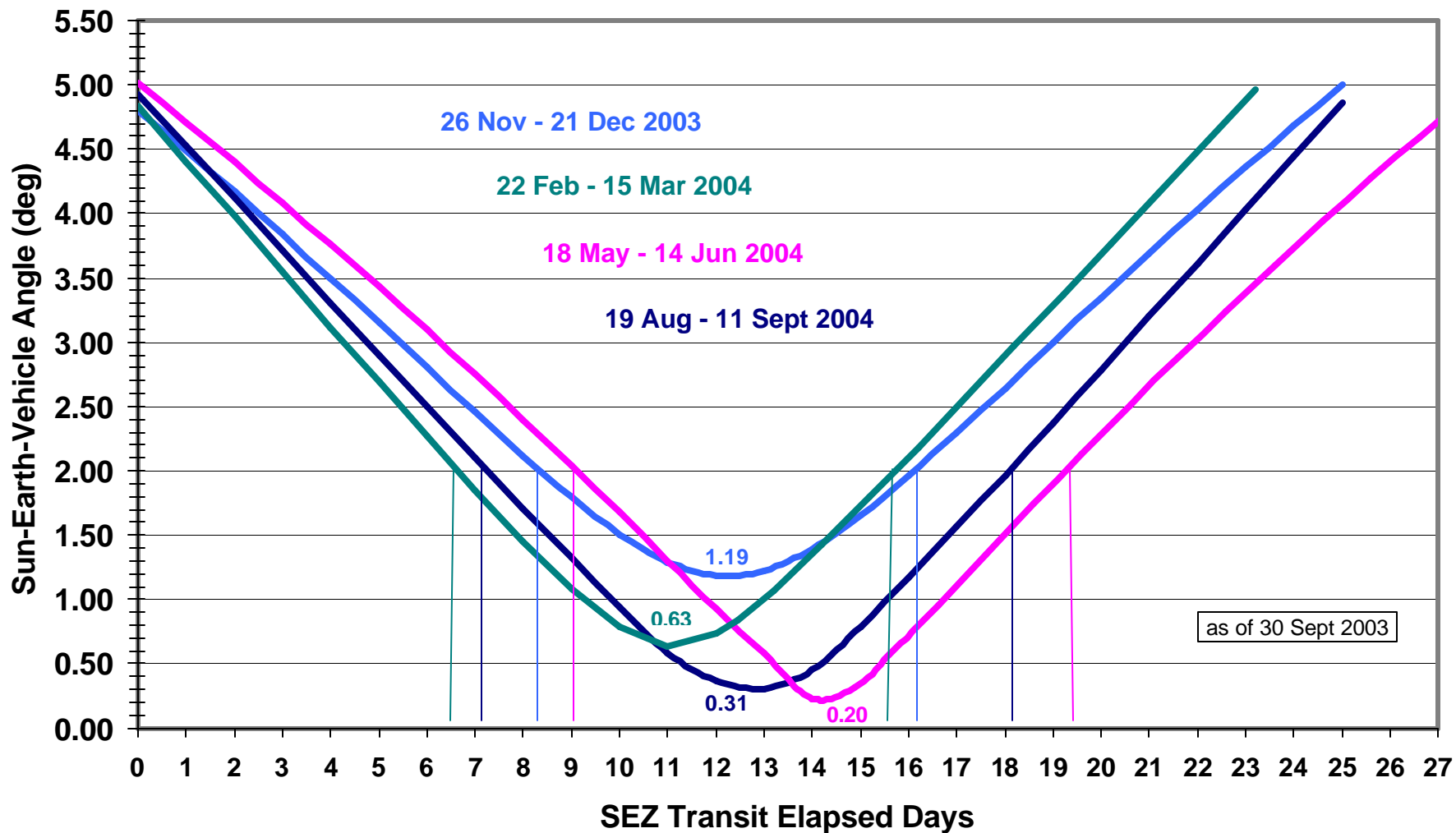
ACE Transits Nov. 2003 thru Sept. 2004

(530-day orbit segment shown)





Four Upcoming ACE SEZ Transits: December 2003 to September 2004





May/June 2004 Transit Schedule

SEV < 1.0°

- The following provides the pass times during the critical 4 days of the upcoming transit.
- The hi-rate telemetry outage is expected to cover 2 days (62 hours).
- Low and medium downlink rates and 26m antenna performance will also be tested.

<u>DOY</u>	<u>Station</u>	<u>Pass Time</u>	<u>SEV</u>	
151	D24	1835 1935 2335 2350	0.68° - 0.62°	No problems expected
152	D24	1240 1340 1640 1655	0.41° - 0.36°	May have problems with hi-rate
153	D27	1250 1315 1645 1655	Across solar disc	Unlikely to lock onto downlink
154	D27	1250 1315 2315 2325	0.48° - 0.63°	Expect to lock onto hi-rate during this time; 10 hours scheduled



Upcoming May/June 2004 SEZ Transit



- 5/19 01:42Z 4.75 deg inbound
- 5/27 07:45Z 2.0 deg inbound
- 5/30 23:39Z 0.63 deg inbound*
- 6/01 01:18Z 0.2629 deg (kissing solar disk inbound)
- 6/01 10:46Z 0.197 deg (radius of closest approach to solar center)
- 6/01 22:14Z 0.2629 deg (kissing solar disk outbound)
- 6/02 23:28Z 0.63 deg outbound*
- 6/06 11:15Z 2.0 deg outbound
- 6/14 07:18Z 4.75 deg outbound

*0.63 deg was the closest approach during Feb./Mar. transit. ACE will spend almost exactly 3 days within this zone.



Feb/March 2004

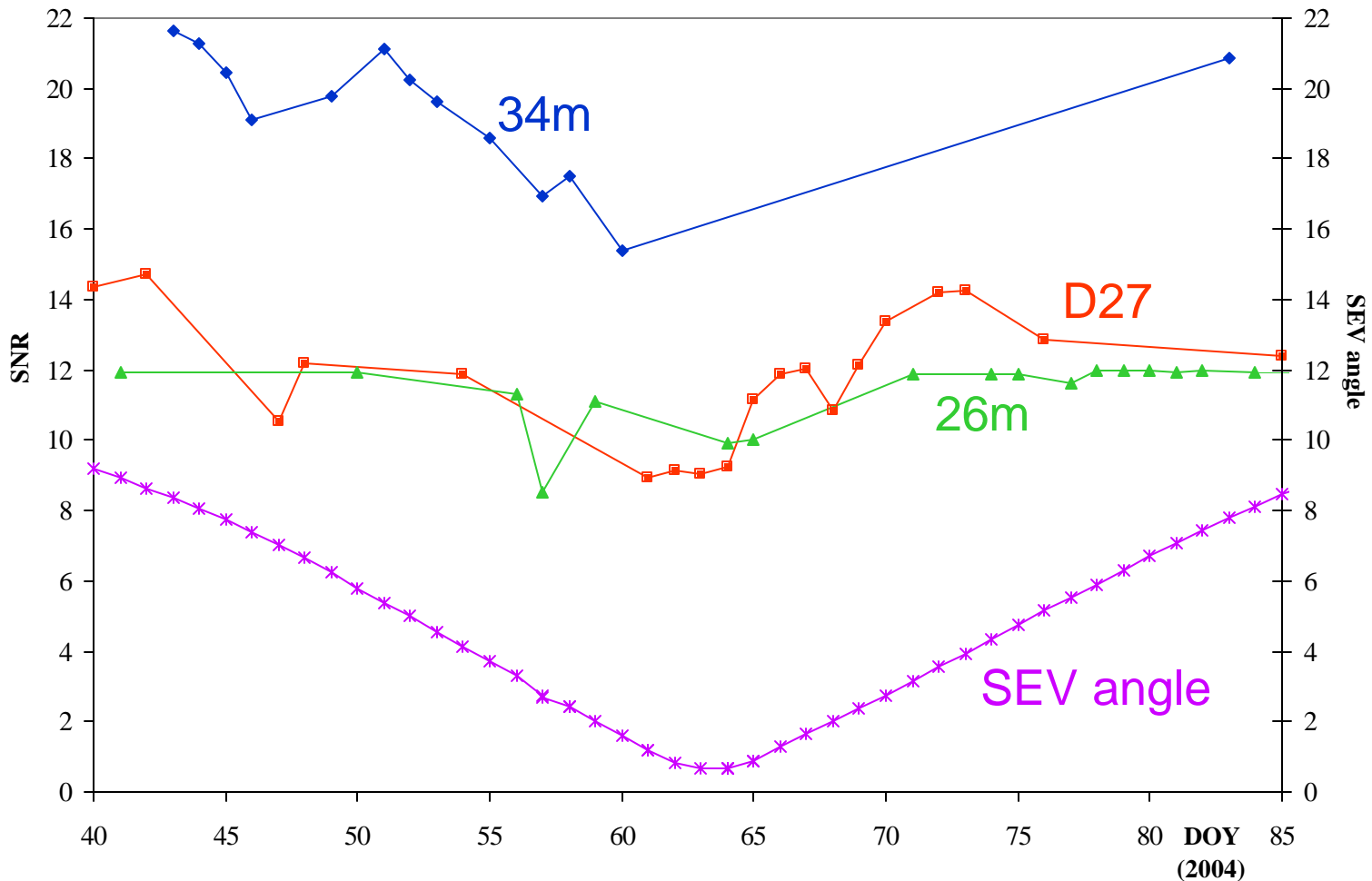
Hi-Rate Downlink Results

<u>Station</u>	<u>Date</u>	<u>SEV Angle</u>	<u>SNR</u>	<u>Able to lock onto hi-rate</u>
D24	02/29/2003	1.59°	15.4 dB	Yes
D27	03/03/2004	0.65°	9.1 dB	Yes
D46	03/03/2004	0.63°		No
D27	03/04/2004	0.66°	9.2 dB	Yes
D16	03/04/2004	0.75°	9.9 dB	Yes

- **The single pass with D46 (SEV=0.63°) may not conclusively define the boundary for 26m acquiring hi-rate. More test supports should be done in the upcoming transit.**
- If 26m does lose lock on hi-rate at SEV=0.7°, then based solely on antenna diameter 34m would lose lock at SEV=0.5°.
- Due to limited DSN resources, the smallest SEV tested with a 34m antenna was 1.59°. During the December 2003 transit, D24 successfully acquired telemetry at SEV=1.30° (SNR=14.2dB).



SNR during Feb/March 2004 Transit

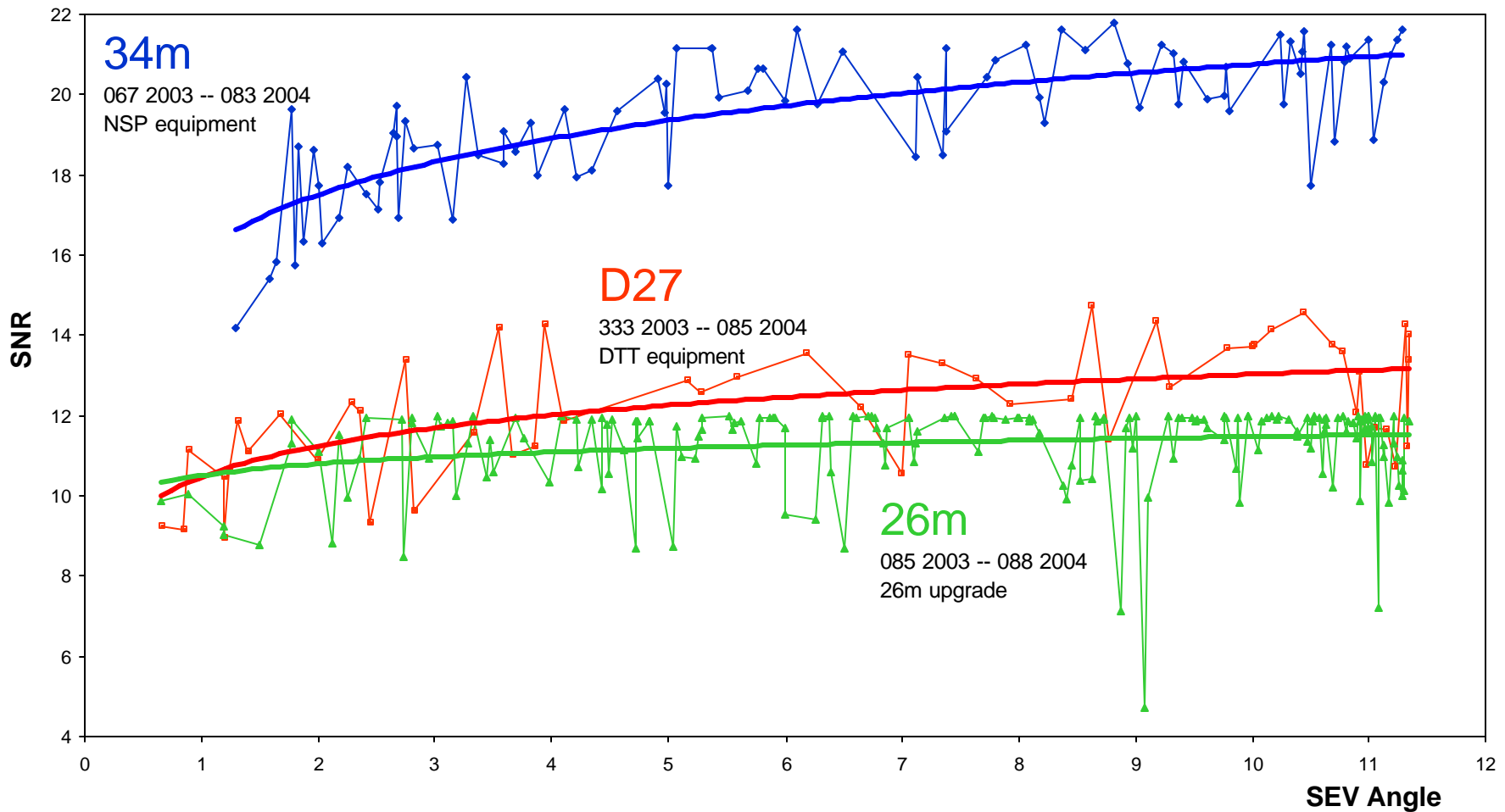


This plot provides the daily SNR during the transit (note the daily fluctuations). The next page provides SNR vs SEV for the past year.



SNR versus SEV angle

2003-2004



- 34m and D27 antennas show a 3dB drop as the SEV angle approaches 1.0°.
- 26m antennas have a smaller drop since the calculated SNR has a max value of 12dB (no corrections)



ulysses

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

B. Brymer

May 20, 2004

NASA Jet Propulsion Laboratory



<http://ulysses.jpl.nasa.gov/>



ULYSSES

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

- NOMINAL SPACECRAFT OPERATIONS CONTINUE
- SPACECRAFT POWER AND THERMAL RECONFIGURATIONS AND INSTRUMENT CALIBRATIONS ARE PERFORMED AS REQUIRED
- SPACECRAFT EARTH-POINTING MANEUVERS ARE BEING PERFORMED EVERY 9 DAYS

ULYSSES

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

REQUESTED CHANGE IN ULP FROM SEPTEMBER 2004 UNTIL NOVEMBER 2006 TO REFLECT SEVEN (7) FIVE-HOUR PASSES PER WEEK, HAS BEEN ACCOMPLISHED, BUT TO FACILITATE SCHEDULING EFFORTS A TRACK TO GAP EXPRESSION MUST ALSO BE SPECIFIED.

- ORIGINAL GUIDELINE SUGGESTED NO GAP GREATER THAN 19 HOURS. 19 HOUR GAPS, WITH 5 HOUR PASSES IMPLY THE ALLOTMENT OF THE SAME 5 HOURS DAILY. THIS IS NOT THE CASE
- ORIGINAL GUIDELINE ALLOWS FOR GAPS LESS THAN 19 HOURS. THIS INFERS PASSES LONGER THAN 5 HOURS, WHICH ARE DESIRED WHENEVER POSSIBLE

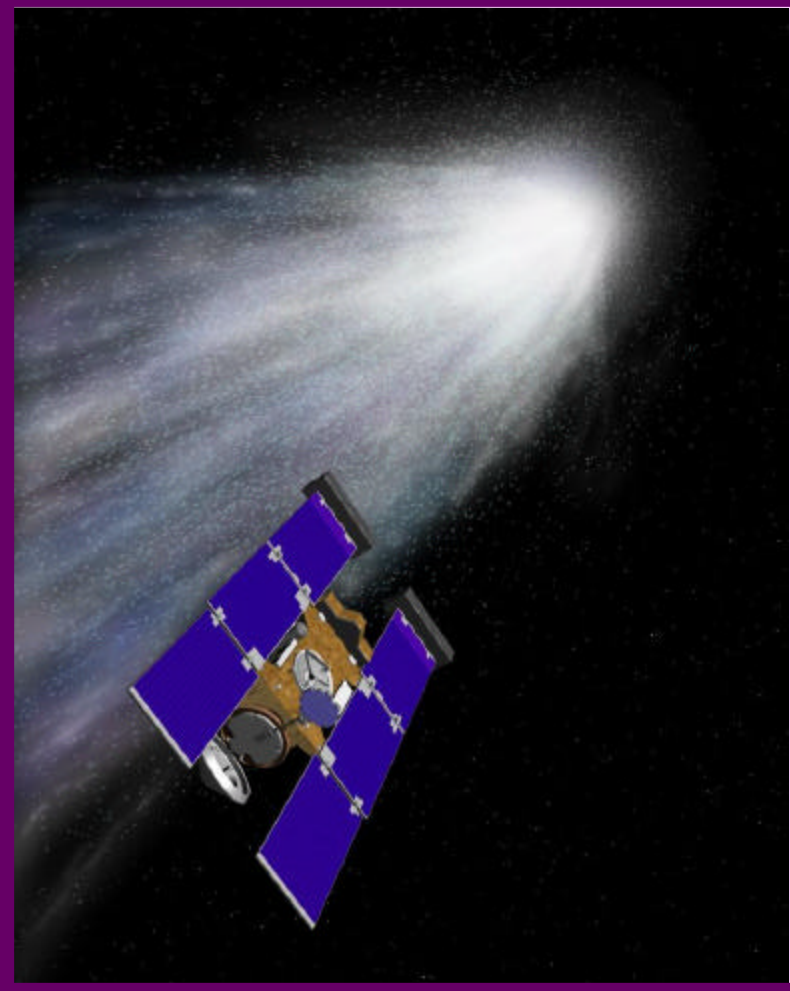
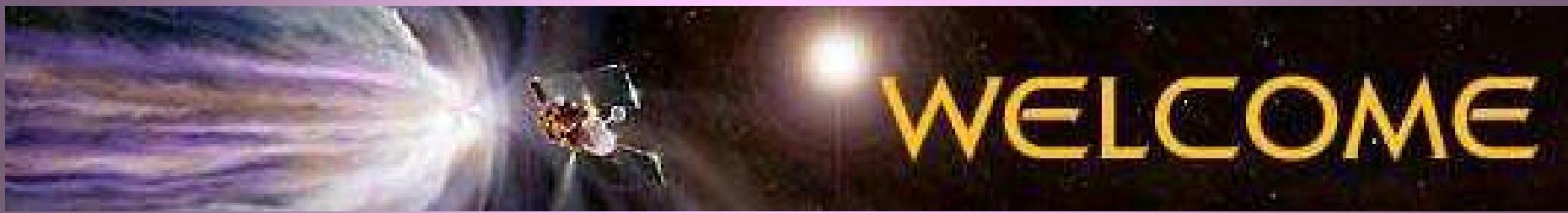
ULYSSES

JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

Per meeting (5/19/2004) with Scheduler and Ulysses Ops, the operational requirements which will be presented to RAPSO are as follows:

- 5 Hour track minimum with 2 hours of U/L capability at the end of each support.
- A 24 hour maximum gap requires a 7 hour pass
(1/3.5 gap to track ratio)

In Summary, any gaps between DSN tracks will be no more than 3.5 times longer than the DSN support that follows.



STARDUST

JOINT USERS

RESOURCE ALLOCATION

PLANNING COMMITTEE

R. E. Ryan
May 20, 2004

NASA Jet Propulsion Laboratory

<http://stardust.jpl.nasa.gov>

STATUS

SPACECRAFT IS HEALTHY (5/20/04)

PRESENTLY 1.6 AU from EARTH

00:27:06 RTLT

2.5 AU from SUN

CRUISE MODE

TELEMETRY BIT RATE IS 1050 bps (on HGA/34 METER)

DSMS SUPPORT HAS BEEN GOOD THIS PAST PERIOD

<http://stardust.jpl.nasa.gov>

(there are some good shots, movies and information)

UPCOMING EVENTS

MINIMUM EARTH RANGE, JUNE 16, 1.53 AU

SOLAR OPPOSITION ON JUNE 24

APHELION OF 2.68 AU FROM THE SUN

7 WEEKS CENTERED ON OCTOBER 2004

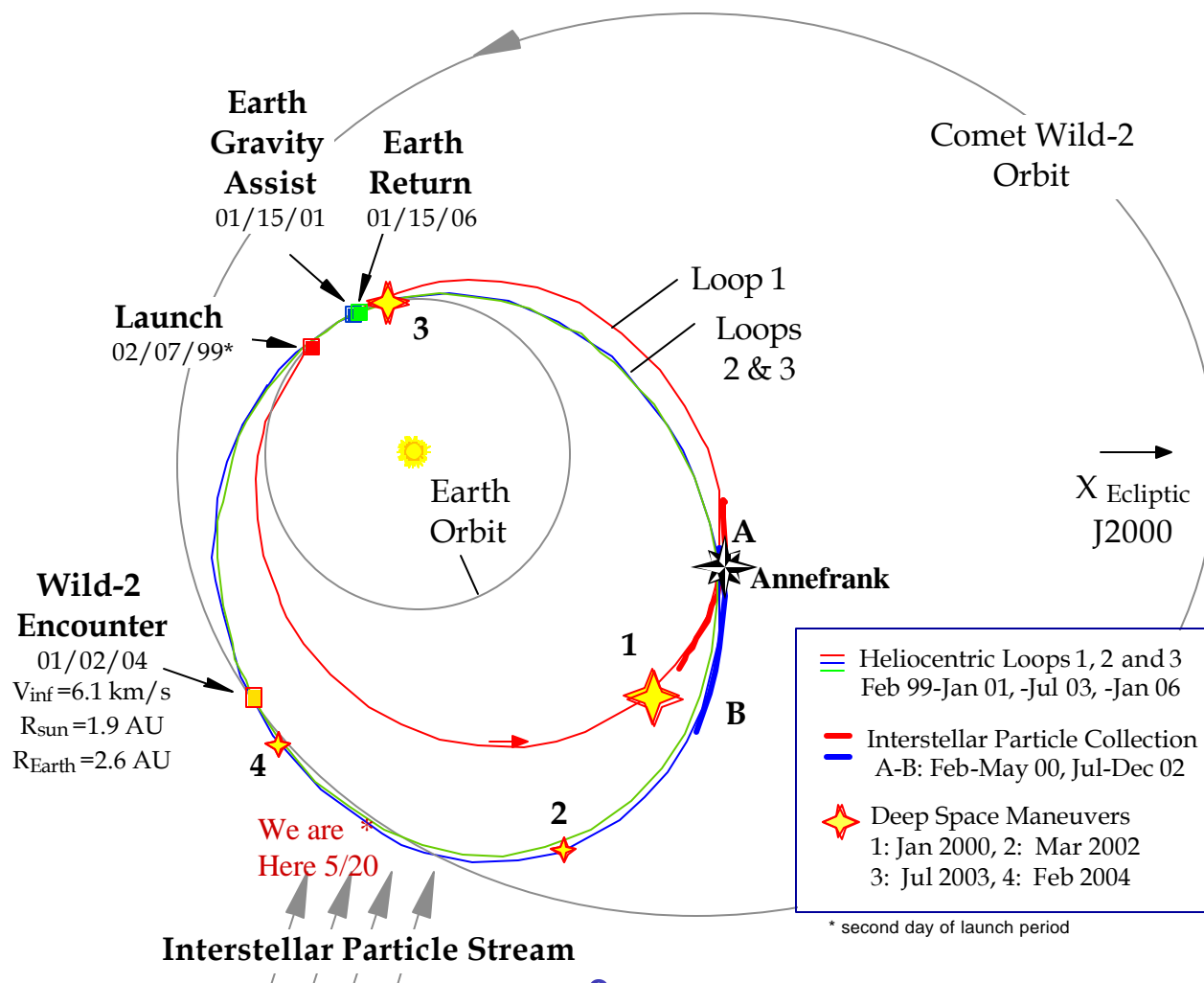
LIMITED COMMUNICATION BECAUSE OF POWER RESTRICTIONS

(long period of 3 hour duration tracks)

TCM 16 ON April 6, 2005

STARDUST

Report to JURAP





VOYAGER

FLIGHT OPERATIONS

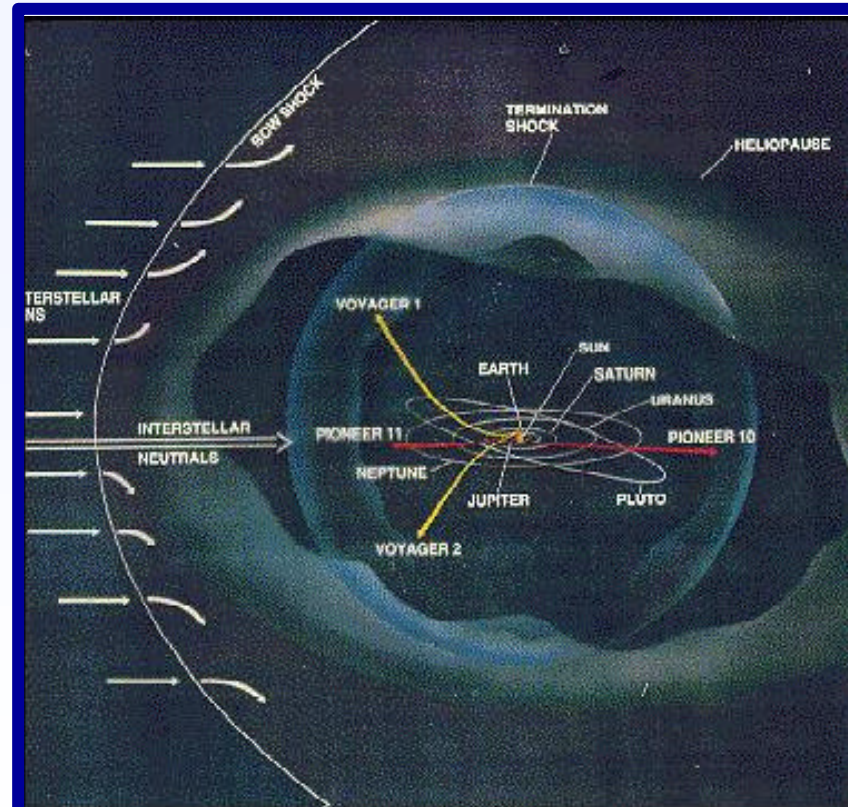
JOINT USERS RESOURCE ALLOCATION PLANNING COMMITTEE

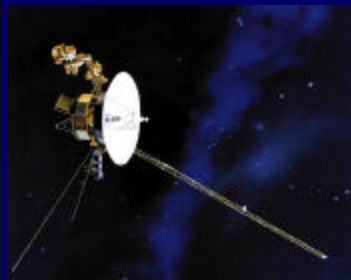
Jefferson Hall
May 20, 2004

NASA Jet Propulsion Laboratory



<http://voyager.jpl.nasa.gov>





VOYAGER

FLIGHT OPERATIONS



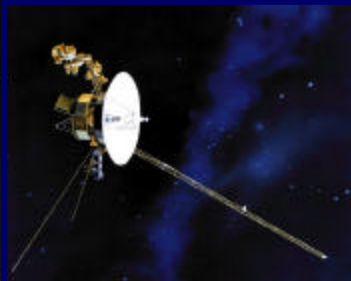
FLIGHT SYSTEM STATUS

VOYAGER 1

- * HELIOCENTRIC DISTANCE – 91.9 AU, RTLT – 25h16m08s
- * SPACECRAFT REMAINS HEALTHY
(Roll Branch 1 Thruster heaters failed 5/3. Successfully swapped to backup Branch 2 on 5/5)
- * MAJOR ACTIVITY: ASCAL, PLAYBACK, PMPCAL, & MAGROL

VOYAGER 2

- * HELIOCENTRIC DISTANCE – 73.3 AU, RTLT – 20h10m50s
- * SPACECRAFT REMAINS HEALTHY
- * MAJOR ACTIVITY: ASCAL, MAGROL, PLAYBACK, & PMPCAL



VOYAGER

FLIGHT OPERATIONS



GROUND SYSTEM STATUS

(March 12, 2004 thru May 14, 2004)

- DSN - OVERALL SUPPORT – GOOD
 - ? SEVEN OUTAGES ON VOYAGER 1 DUE TO WEATHER AT DSS-65, AND TWO OUTAGES DUE TO SPC 10 POWER FAILURES;
 - ? THERE WERE NO OUTAGES ON VOYAGER 2!!



VOYAGER

FLIGHT OPERATIONS



TOTAL SUPPORT TIME, OUTAGE TIME, % OF OUTAGE TIME

S/C	SCHED. SUPPORT	ACTUAL SUPPORT	70M TIME	SIGNIFICANT OUTAGE TIME	% OF OUTAGE TIME
31	1013.7	1019.6	277.2	28.6(1.1)	2.9
32	767.3	768.1	366.1	0(0.7)	0.09

VOYAGER HOMEPAGE - <http://voyager.jpl.nasa.gov>